WILDLIFE REVIEW

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MAR 23 1965

UNITED STATES DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE

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WILDLIFE REVIEW

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Except as indicated, abstracts are by Kenneth J. Chiavetta, editor,
and Paul A. Stewart, assistant editor.

SOILS

Arno, John R., and others. SOIL SURVEY OF AROOSTOOK COUNTY, MAINE / SOUTHERN PART. SCS, Ser. 1961, no. 6. i + 62 p., 4 figs. + single-fold maps based on aerial photos and bound in. Aug. 1964. Sold by Supt. Documents. WR 115: 2
With a section on wildlife.

Beesley, Thomas E., and others. SOIL SURVEY OF GAGE COUNTY, NEBRASKA. SCS, Ser. 1959, no. 36. i + 76 p., 20 figs. + folded maps based on aerial photos and bound in. May 1964. Sold by Supt. Documents. WR 115: 2
With a section on wildlife.

Bell, Elbert L., and others. SOIL SURVEY OF LOGAN COUNTY, KANSAS. SCS, Ser. 1959, no 35. i + 78 p., 32 figs. + folded maps based on aerial photos and bound in. July 1964. Sold by Supt. Documents. WR 115: 2
With a section on wildlife.

Bowlsby, Clyde C., and others. SOIL SURVEY OF TILLAMOOK AREA, OREGON. SCS, Ser. 1957, no. 18. i + 75 p., 12 figs. + single-fold maps based on aerial photos and bound in. Aug. 1964. Sold by Supt. Documents. WR 115: 2
With a section on wildlife.

Brooks, Charles A., and others. SOIL SURVEY OF ELLIS COUNTY, TEXAS. SCS, Ser. 1961, no. 7. i + 76 p., 27 figs. + folded maps based on aerial photos and bound in. Aug. 1964. Sold by Supt. Documents. WR 115: 2
With a section on managing soils for wildlife.

Cawthorn, Joel W., and others. SOIL SURVEY OF IREDELL COUNTY, NORTH CAROLINA. SCS, Ser. 1960, no. 14. i + 96 p., 11 figs. + folded maps based on aerial photos and bound in. June 1964. Sold by Supt. Documents. WR 115: 2
With a section on wildlife.

Cole, William A., and others. SOIL SURVEY OF JACKSON COUNTY, MISSISSIPPI. SCS, Ser. 1960, no. 18. 65 p., 6 figs. + single-fold maps based on aerial photos and bound in. June 1964. Available from Supt. Documents. WR 115: 2
With a section on wildlife.

Grogger, Harold E., and others. SOIL SURVEY OF DAVIESS COUNTY, MISSOURI. SCS, Ser. 1959, no. 34. i + 39 p., 9 figs. + folded maps based on aerial photos and bound in. Feb. 1964. Sold by Supt. Documents. WR 115: 2
Includes a section on wildlife and recreation.

Matthews, Earle D., and others. SOIL SURVEY OF CAROLINE COUNTY, MARYLAND. SCS, Ser. 1959, no. 33. i + 53 p., 1 fig. + single-fold maps based on aerial photos and bound in. Jan. 1964. Sold by Supt. Documents. WR 115: 2
With a section on wildlife.

Nestrud, Lorne M., and others. SOIL SURVEY OF MINNEHAHA COUNTY, SOUTH DAKOTA. SCS, Ser. 1958, no. 30. i + 102 p., 16 figs. + folded maps based on aerial photos and bound in. June 1964. Sold by Supt. Documents. WR 115: 2
Includes a section on managing soils for wildlife.

Newman, Allen L., and others. SOIL SURVEY OF COCHRAN COUNTY, TEXAS. SCS, Ser. 1960, no. 17. i + 80 p., 25 figs. + single-fold maps based on aerial photos and bound in. Mar. 1964. Sold by Supt. Documents. WR 115: 2

Newton, John H., and Raymond P. Sims. SOIL SURVEY OF FULTON COUNTY, KENTUCKY. SCS, Ser. 1961, no. 8. i + 72 p., 6 figs. + single-fold maps based on aerial photos and bound in. Aug. 1964. WR 115: 2
The use of soils by wildlife, habitat requirements, and wildlife productivity groups are the sections devoted to wildlife.

SOILS--Continued

Scrivner, C. L., and Joe A. Prieze. SOIL SURVEY OF MONITEAU COUNTY, MISSOURI. SCS, Ser. 1953, no. 11. i + 42 p., 13 figs. + single-fold maps based on aerial photos and bound in. May 1964. Sold by Supt. Documents. WR 115: 3

True, J. C., and others. SOIL SURVEY OF WILLIAMSON COUNTY, TENNESSEE. SCS, Ser. 1961, no. 5. i + 147 p., 36 figs. + single-fold maps based on aerial photos and bound in. Aug. 1964. Sold by Supt. Documents. WR 115: 3
With a section on managing soils for wildlife and fish.

CONSERVATION EDUCATION

Dana, Samuel T., and Evert W. Johnson. SELECTED BIBLIOGRAPHY ON EDUCATION IN FORESTRY AND RELATED FIELDS OF NATURAL RESOURCES MANAGEMENT. J. Forestry 62 (8): 541-549. Aug. 1964. WR 115: 3
[Univ. Mich., Ann Arbor.] Contains a section of 20 titles on wildlife management. This is a good reading guide for educators in the field of natural resource management and for students considering careers in that field, particularly forestry and related subjects.

Norden, Roger M. TEACHER TRAINING -- KEY TO CONSERVATION'S FUTURE. Md. Conservationist 41(4): 2-5, illus. July-Aug. 1964. WR 115: 3
[Univ. Md., College Park.] A plea for increased emphasis on training Md. elementary school teachers in conservation concepts.

PLANTS--FLORAS, COMMUNITIES, TAXONOMY

Phillips, Ronald C. COMPREHENSIVE BIBLIOGRAPHY OF ZOSTERA MARINA. US F&WS Spec. Sci. Rept.--Wildl. no. 79. [i] + 35 p. Jan. 1964. WR 115: 3
[Seattle Pacific Coll., Seattle, Wash.] "In the course of research on eelgrass, Zostera marina L., a large bibliography was compiled on a worldwide basis. An attempt was made to make the reference list as complete as possible. References are listed alphabetically by authors."

WILDLIFE--BIOTAS, ECOLOGY, NATURAL HISTORY

Aschoff, Jürgen. [ECOLOGICAL AND EVOLUTIONARY ASPECTS OF "BIOLOGICAL CLOCKS".] DIE BEDEUTUNG CIRCADIANER RHYTHMEN FUER DIE OEKOLOGIE! [THE ECOLOGICAL SIGNIFICANCE OF CIRCADIAN RHYTHMICITY.] Proc. 16th Intern. Congr. Zool. 4: 341-345. [1964]. In German. WR 115: 3
[Max Planck Inst. für Verhaltensphysiologie, 8131 Seewiesen & Erling-Andechs, Germany.]

Benson, Constantine W. BIRDS ASSOCIATING WITH UNGULATES. Auk 81(3): 436. July 1964. WR 115: 3
[Rhodes-Livingstone Museum, P. O. Box 124, Livingstone, Northern Rhodesia.]

Bolwig, Niels. ASPECTS OF ANIMAL ECOLOGY IN THE KALAHARI. Koedoe 1: 115-135, 5 figs. 1958. WR 115: 3
[Univ. Witwatersrand, Johannesburg, Transvaal, Union South Africa.] Adaptations of animals to life in a desert environment are discussed. About 50 references are cited.

Hitchcock, W. B. AN INTRODUCTION TO THE NATURAL HISTORY OF A NEW GUINEA HIGHLAND COMMUNITY. Emu 63(5): 351-372, illus. June 1964. WR 115: 3
Systematic lists are given of insects, birds, and mammals observed during a 3-month stay in New Guinea.

Holdgate, M. W. OBSERVATIONS OF BIRDS AND SEALS AT ANVERS ISLAND, PALMER ARCHIPELAGO, IN 1955-57. British Antarctic Surv. Bull. 2: 45-51. Dec. 1963. [From J. Mammal. 45(3), 1964.] WR 115: 4

Kenyon, Karl W. WILDLIFE AND HISTORICAL NOTES ON SIMEONOF ISLAND, ALASKA. Murrelet 45(1): 1-8, 3 figs. Jan.-Apr. 1964. WR 115: 4
[Bur. Sport Fisheries & Wildl., Seattle, Wash.] With a brief history of Simeonof Island as well as annotated lists of birds and mammals observed. Simeonof Island was made a national wildlife refuge on 30 Oct. 1958.

Mayr, Ernst. THE FAUNA OF NORTH AMERICA, ITS ORIGIN AND UNIQUE COMPOSITION. Proc. 16th Intern. Congr. Zool. 4: 3-11. [1964]. WR 115: 4
[Harvard Univ., Cambridge, Mass.] "After 200 years of research, North American zoogeography is an area as rich as ever in intellectual challenge."

Pienaar, U. de V. A SUPPLEMENTARY CHECK-LIST OF DECAPODA, FRESH-WATER FISH, AMPHIBIA, REPTILES AND SMALL MAMMALS RECORDED IN THE KRUGER NATIONAL PARK. Koedoe 4: 167-177. 1961. WR 115: 4
[Kruger Natl. Park, Skukuza, Republic South Africa.]

Thomson, A. Landsborough. BIRDS ASSOCIATED WITH ELEPHANTS AND HIPPOPOTAMUSES. Auk 81(3): 436. July 1964. WR 115: 4
[42 Girdwood Rd., Southfields, London, England.]

WILDLIFE--NATURAL AREAS & REFUGES

Bowman, Robert I. [SCIENTIFIC USE OF NATURAL AREAS.] THE SCIENTIFIC NEED FOR ISLAND RESERVE AREAS. Proc. 16th Intern. Congr. Zool. 3: 394-399. [1964]. WR 115: 4
[San Francisco State Coll., San Francisco, Calif.]

Curry-Lindahl, Kai. THE CONGO NATIONAL PARKS SINCE INDEPENDENCE. Oryx 7 (5): 233-239, illus. Aug. 1964. WR 115: 4
[Nordiska Museum & Skansen, Stockholm, Sweden.] An account of the vicissitudes of the Congo national parks and their conservators following the collapse of government in the Congo in 1960. "As the Congo national parks have survived the first three extremely difficult years after independence, one may presume that the most critical period is over, and that the only integral nature reserve of this size will continue to be preserved by the Congo Government."

Findlay, John D. NATIONAL WILDLIFE REFUGES IN NORTH CAROLINA. Wildl. in N. C. 28(6): 7-9, illus. June 1964. WR 115: 4
[Bur. Sport Fisheries & Wildl., Washington, D. C.] The 7 federal wildlife refuges existing in or planned for N. C. will comprise an area of some 147,000 acres. Location, features, benefits and objectives of each refuge are highlighted.

Huxley, Julian, E. B. Worthington, Th. Monod, Lloyd W. Swift, and M. Alain Gille. SAVING THE WILDLIFE OF ETHIOPIA / RECOMMENDATIONS OF A UNESCO MISSION. Oryx 7(5): 247-250. Aug. 1964. WR 115: 4
This article consists of excerpts from the report of a mission, requested by the Ethiopian Government and sponsored by UNESCO. The report recommended the establishment or expansion of 5 national parks and 3 controlled wildlife areas and urged special measures for protection of 5 spp. of rare large mammals.

Kay, June. THE WILDEST RESERVE ON EARTH. Cape Wild Life 19: 20-23, illus. June 1964. WR 115: 4
The Moremi Wildlife Reserve, in Bechuanaland, is the only wildlife reserve to be voluntarily set aside by an African hunting-people. This reserve has almost every form of animal life that occurs in the southern half of Africa. It is "probably the wildest of its kind on earth, and it is the policy of the governing body to keep it so."

Petrusewicz, Kazimierz. [SCIENTIFIC USE OF NATURAL AREAS.] SCIENTIFIC NEED OF NATURAL AREAS. Proc. 16th Intern Congr. Zool. 3: 381-386. [1964]. WR 115: 5
[Inst. Ecol., Polish Acad. Sci., Warsaw.]

Verschuren, Jacques. [SCIENTIFIC USE OF NATURAL AREAS.] LES RESERVES INTEGRALES SONT INDISPENSABLES POUR LA PRESERVATION ET L'ETUDE DES ESPECES ZOOLOGIQUES, DANS LES REGIONS TROPICALES. [SANCTUARIES ARE INDISPENSABLE FOR THE PRESERVATION AND STUDY OF ZOOLOGICAL SPECIES IN TROPICAL REGIONS.] Proc. 16th Intern. Congr. Zool. 3: 387-393. [1964]. In French. WR 115: 5
[Brussels, Belgium.]

WILDLIFE--NATURE PROTECTION & RARE & EXTINCT SPECIES

Eloff, F. C. ENKELE BESKOUINGS OOR DIE MOONTLIKE OORSAKE VIR DIE UITSTERF VAN DIERE. [SOME SPECULATIONS ON THE POSSIBLE CAUSES FOR THE EXTINCTION OF ANIMALS.] Koedoe 4: 141-166. 1961. [In Afrikaans with English summ.] WR 115: 5
The following possible causes of extinction are discussed: racial senility, animal psychology, temperature, adaptation specialization, parasites, epidemic disease, isolation, minimum population concept, and population genetics.

Flyger, Vagn. URBAN SPRAWL ENDANGERS NATIVE MARYLAND MAMMALS. Md. Conserv. 41(3): 6-7, illus. May-June 1964. WR 115: 5
[Nat. Resources Inst. Univ. Md., Annapolis.] Of Md. mammals, only the Bryant fox squirrel (Sciurus niger bryanti) is in danger of immediate extinction. The Bryant fox squirrel formerly was distributed over Del., southeastern Pa. and the eastern shore of Md., but it now occurs only in 6 Md. counties. Dams planned for the Potomac River by federal agencies will destroy much of the habitat of the southern fox squirrel (Sciurus niger vicimus).

Homolka, Charles L. OUR RAREST MAMMAL? Audubon Magazine 66(4): 244-246, illus. July-Aug. 1964. WR 115: 5
[Connally Air Force Base, Waco, Texas.] The black-footed ferret (Mustela nigripes) may be near extinction. A 7-year survey revealed acceptable reports of only 90 ferrets. Some of these involved the same animals. Nearly one-third of the report involved dead animals.

Moore, John A., editor. THE PROTECTION OF VANISHING SPECIES. Proc. 16th Intern. Congr. Zool. 8. 38 p. 1964. WR 115: 5
The following papers are included in this publication: Extinct, rare and endangered American freshwater fishes (p. 4-16) by Robert Rush Miller; Threatened species of mammals in North America (p. 17-21) by Ian McTaggart Cowan; Threatened birds of the New World (p. 22-24) by S. Dillon Ripley; Vanishing birds of the Old World (p. 25-28) by Jean Dorst; Rare and threatened mammals in Africa (p. 29-32) by Thane Riney; Vanishing mammals of Asia (p. 33-36) by Harold J. Coolidge.

Mountfort, Guy. DISAPPEARING WILDLIFE AND GROWING DESERTS IN JORDAN. Oryx 7(5): 229-232, illus. Aug. 1964. WR 115: 5
This is part of the report of an expedition invited by the Jordan Government to study the conservation needs of wildlife and other natural resources. The expedition's report recommended the establishment of several national parks--a recommendation accepted by the Jordan Government.

Stivens, Dal. LAST CALL FOR NEW ZEALAND'S GROUND PARROT. Animal Kingdom 67 (4): 101-106, illus. July-Aug. 1964. WR 115: 5
The kakapos (Strigops habroptilus), a flightless parrot of New Zealand, is thought to be nearly extinct. A colony may still exist in a 3,000,000-acre wilderness area not yet dominated by man. Attempts to rear the birds outside their natural habitat have been unsuccessful.

van der Merwe, Nico J. THE POSITION OF NATURE CONSERVATION IN SOUTH AFRICA. Koedoe 5: 1-122, illus. 1962. WR 115: 6
Synoptic histories by provinces of the conservation of natural features from 1952 to the present.

Warneke, R. M. RARE TODAY--TOMORROW...? Victoria's Resources 5(1): 24-25, illus. Mar.-May 1963. WR 115: 6
[Fisheries & Wildl. Dept., 605 Flinders St., Melbourne, Australia.] Reports present status in Victoria of 4 rare or nearly extinct spp.: Leadbeater's possum (Gymnobelideus leadbeateri), beaked whale (Mesoplodon layardi), smoky mouse (Gyomys fumeus) and poporoo (Potorous tridactylus).

WILDLIFE--MORPHOLOGY, PHYSIOLOGY, BEHAVIOR, MIGRATION

Babich, K. ANIMAL BEHAVIOUR WITH RESPECT TO TOURISTS IN THE KRUGER NATIONAL PARK. Koedoe 7: 124-152, 4 figs. 1964. WR 115: 6
Report of a 3-week survey of tourist-wild animal relationships. The average tourist commits one or more minor offenses against park regulations, but about 5% of the tourists were responsible for all major offenses. Classified in an appendix are 62 separate sets of observations of tourist-wild animal relations.

Griffin, Donald R. [ANIMAL NAVIGATION.] ACOUSTICAL ORIENTATION. Proc. 16th Intern. Congr. Zool. 4: 382-383. [1964]. WR 115: 6
[Harvard Univ., Cambridge, Mass.]

Haagner, C. H. BIO-ACCOUSTICAL STUDIES IN THE NATIONAL PARKS. Koedoe 5: 168-170. 1962. WR 115: 6
[Natl. Parks Board, Pretoria, Transvaal, Union South Africa.] A program is being started to develop a library of African animal sounds. This article discusses some of the problems involved. Persons interested in contributing recordings are urged to contact the author.

Holling, C. S. [MIMICRY.] MIMICRY AND PREDATOR BEHAVIOR. Proc. 16th Intern. Congr. Zool. 4: 166-172. [1964]. WR 115: 6
[Forest Insect Lab., Sault Ste. Marie, Ontario, Canada.]

Morris, J. J. VELDAANGELEENTHEDE EN BEWEGING VAN WILD IN DIE KALAHARI-GEMSBOKPARK. [FACTORS INFLUENCING MOVEMENT OF GAME ANIMALS IN THE KALAHARI GEMSBOK PARK.] Koedoe 1: 136-142. 1958. [In Afrikaans with English summ.] WR 115: 6
Movements of game are probably controlled by veld type, water supply, presence of licks, and rainfall.

Odum, Eugene P. [BIOLOGICAL PRODUCTIVITY AT THE HETEROTROPIC LEVELS.] PRIMARY AND SECONDARY ENERGY FLOW IN RELATION TO ECOSYSTEM STRUCTURE. Proc. 16th Intern. Congr. Zool. 4: 336-338. [1964]. WR 115: 6
[Univ. Ga., Athens.]

Remington, Charles L. [MIMICRY.] HISTORICAL BACKGROUNDS OF MIMICRY. Proc. 16th Intern. Congr. Zool. 4: 145-149. [1964]. WR 115: 6
[Yale Univ., New Haven, Conn.]

Waters, Joseph H. EVOLUTION AND DISPERSAL OF CONTEMPORARY VERTEBRATES IN EASTERN NORTH AMERICA. Proc. 16th Intern. Congr. Zool. 1: 205. [1964]. WR 115: 6
[Duke Univ., Durham, N. C.]

WILDLIFE--EFFECTS OF CHEMICALS, WEATHER, CARS, ETC.

Bruijns, M. F. Mörzer. BIRD MORTALITY IN THE NETHERLANDS IN THE SPRING OF 1960, DUE TO THE USE OF PESTICIDES IN AGRICULTURE. Intern. Council Bird Preserv. IX Bull. 1963. p. 70-75, 1 fig. [1963]. English summ. of a report in Dutch. WR 115: 7

[R.I.V.O.N., Bilthoven, Netherlands.] Questionnaire replies indicated that approximately 27,000 birds of 55 spp. were found dead in the Netherlands in 1960. "Probably about 200,000 birds were killed in the Netherlands in March and April 1960." The chief cause of mortality was the illegal use of parathion to control wood pigeons, stock doves, rooks, crows, jackdaws, gulls, and voles (Microtus arvalis).

Graham, P. DESTRUCTION OF BIRDS AND OTHER WILD LIFE, BY DIELDREX SPRAYING AGAINST TSETSE FLY IN BECHUANALAND. Arnoldia 1(10): 1-4. 11 June 1964. WR 115: 7

[Tsetse Fly Control Dept., Bechuanaland.] An area of about 1 square mile was sprayed with Dieldrex during 24 Feb.-3 Mar. to control tsetse flies, and 109 birds, 12 mammals, 3 reptiles, and 3 fish were found dead on the area within 10 days after treatment was completed.

Moore, John A., editor. NATURE, MAN AND PESTICIDES. Proc. 16th Intern. Congr. Zool. 7. 44 p. 1964. WR 115: 7

This volume contains the following papers: Man, food and insects as an ecological problem (p. 5-13) by D. J. Kuenen; Opportunities for the development of specific methods of insect control (p. 14-26) by E. F. Knipling; Effect of pesticides on human health (p. 27-34) by Wayland J. Hayes, Jr.; The validity of ecological models (p. 35-42) by Paul B. Sears.

Springer, Paul F. WILDLIFE MANAGEMENT CONCEPTS COMPATIBLE WITH MOSQUITO SUPPRESSION. Mosquito News 24(1): 50-55. Mar. 1964. WR 115: 7

[S. Dak. Coop. Wildl. Res. Unit, Brookings.]

U. S. Fish and Wildlife Service. PESTICIDE-WILDLIFE STUDIES, 1963 / A REVIEW OF FISH AND WILDLIFE SERVICE INVESTIGATIONS DURING THE CALENDAR YEAR. F&WS Circ. 199. v + 130 p., illus. Aug. 1964. WR 115: 7

Commercial (p. 5-28) and Sport (p. 29-43) Fisheries investigations are covered in the first two sections. Two additional sections deal with wildlife research at the Denver (p. 44-76) and Patuxent (p. 77-130) Wildlife Research Centers.

WILDLIFE--PARASITES & DISEASES

Clarke, J. E. GAME ELIMINATION AS A MEANS OF TSETSE CONTROL WITH SPECIAL REFERENCE TO HOST PREFERENCES. Puku 2: 67-75. 1964. WR 115: 7

Elimination of game to control tsetse flies has practical value which has been proven in southern Rhodesia. Preferred hosts for the fly are: warthog, elephant, man, buffalo, and bushpig. Game populations need not be exterminated, but they must be brought to very low levels for effective tsetse control. Zebra and hartebeest appear to be very rare hosts and need not be destroyed.

Ewers, W. H. AN ANALYSIS OF THE MOLLUSCAN HOSTS OF THE TREMATODES OF BIRDS AND MAMMALS AND SOME SPECULATIONS ON HOST-SPECIFICITY. Parasitology 54(3): 571-578. Aug. 1964. WR 115: 7

[Australian Natl. Univ., Canberra.]

Johnson, Harald Norlin. DISEASES DERIVED FROM WILDLIFE. Second Vertebrate Pest Control Conf., March 4 and 5, 1964, Anaheim, Calif. p. 138-142. 1964. WR 115: 7

[Calif. State Dept. Public Health, Berkeley.] "The specific diseases of man known to be derived from wildlife in California are: rabies, Western encephalitis, St. Louis encephalitis, Colorado tick fever, Rocky Mountain spotted fever, relapsing fever, Q fever, plague, tularemia, murine typhus,

lymphocytic choriomeningitis, psittacosis, leptospirosis, salmonellosis and toxoplasmosis. A variety of bacterial infections may be contracted from wild animals, notably those caused by Pasteurella pseudotuberculosis, Pasteurella multocida, Bacillus anthracis, Erysipelothrix rhusiopathiae, Clostridium tetani and Listerella monocytogenes. Certain of the fungus diseases such as coccidioidomycosis and histoplasmosis are derived from exposure to wildlife habitats. California virus has been isolated from arthropods and Rio Bravo virus from bats collected in California. It has been shown by serological tests that these viruses may produce infection in man. In the course of field studies of arthropods, small mammals and birds in California and Oregon, several viruses have been isolated which may prove to be of importance as disease agents, that is, Modoc virus, Turlock virus, Kern Canyon virus, Hart Park virus and two yet unnamed viruses isolated from Microtus montanus meadow mice."

Murray, Keith F. THE EVOLUTION OF PLAGUE CONTROL IN CALIFORNIA. Second Vertebrate Pest Control Conf., March 4 and 5, 1964, Anaheim, Calif. p. 143-149, 2 figs. 1964. WR 115: 8

[Calif. State Dept. Public Health, Berkeley.] For several decades human cases of bubonic plague in Calif. have averaged no more than one every two years. Because there are still possible chances of quick plague outbreaks, surveillance and prevention programs are being continued. Current programs involve ectoparasite control rather than squirrel eradication.

WILDLIFE--POPULATIONS & FLUCTUATIONS

Helminen, Matti. RIISTATILANNE METSÄSTYSKAUDEN 1962/63 PÄÄTTYESSÄ. [RELATIVE ABUNDANCE OF SOME GAME AND FUR SPECIES IN FINLAND AT THE END OF THE 1962/63 HUNTING SEASON.] Suomen Riista 16: 186-192, illus. 1963. [In Finnish with English summ.] WR 115: 8

Based on replies to questionnaires, the relative abundance is given for the following 12 fur and game species: Capercaillie (Tetras urogallus), black grouse (Lyurus tetrix), hazel grouse (Tetrastes bonasia), willow grouse (Lagopus lagopus), partridge (Perdix perdix), snow hare (Lepus timidus), field hare (Lepus europaeus), squirrel (Sciurus vulgaris), muskrat (Ondatra zibethica), fox (Vulpes vulpes), ermine (Mustela erminea), and moose (Alces alces).--From summ.

Kämpfe, Lothar. AREALVERÄNDERUNGEN IN DER FAUNA MITTEL- UND NORDEUROPAS. [AREAL-FLUCTUATIONS OF THE FAUNA OF MIDDLE AND NORTHERN EUROPE.] Bulgarska Akad. Nauk., Izvest. Zool. Inst. 16: 215-230, 8 figs. 1964. In German with Russian summ. WR 115: 8

WILDLIFE--TECHNIQUES

Cushing, C. E., Jr. AN APPARATUS FOR SAMPLING DRIFTING ORGANISMS IN STREAMS. J. Wildl. Mgmt. 28(3): 592-594, 1 fig. July 1964. WR 115: 8

[Hanford Lab., Richland, Wash.] Abstract: The design and use of a sampler for quantitatively collecting the drifting biota in streams is described.

Davis, L. Irby. BIOLOGICAL ACOUSTICS AND THE USE OF THE SOUND SPECTROGRAPH. Southwestern Nat. 9(3): 118-145, 7 pls. 20 Aug. 1964. WR 115: 8

[1122 East Polk St., Harlingen, Texas.] Abstract: This paper demonstrates methods for detailed acoustical analysis of vocalizations of animals by means of the sound spectrograph and points out pitfalls and difficulties likely to be encountered. Special attention is given to bird voices because of their complicated nature and a general theory of bird voice is discussed sufficiently to indicate the basis for interpretation of the analysis. A list of specialized terms and definitions is included.

Fankhauser, Don. PLASTIC ADHESIVE TAPE FOR COLOR-MARKING BIRDS. J. Wildl. Mgmt. 28(3): 594. July 1964. WR 115: 9

[Patuxent Wildl. Res. Center, Laurel, Md.] Abstract: Colored plastic adhesive tape wrapped around the tarsus has been used successfully for color-marking birds and has proved to be easy to put on, adaptable, permanent, and colorfast.

Hansen, Charles G. A DYE SPRAYING DEVICE FOR MARKING DESERT BIGHORN SHEEP. J. Wildl. Mgmt. 28(3): 584-587, 4 figs. July 1964. WR 115: 9

[Bur. Sport Fisheries & Wildl., Las Vegas, Nev.] Abstract: A spray device using keratin staining dyes and made of readily procurable materials was used to color mark the hair or horns of desert bighorn sheep (Ovis canadensis) when they came to drink at water holes. The device is triggered by a cord extending to an observer in a blind, and the spray nozzle may be so placed as to mark the animal on the side, rear, or horns. It sprays pink, green, yellow, or violet dyes which have been mixed with alcohol for penetration, brilliance, and permanence. Seventy-four sheep have been marked in two seasons of use. Dyes may remain on the animal until hair is shed or on horns for several years.

Hiehle, Jack L. MEASUREMENT OF BROWSE GROWTH AND UTILIZATION. Calif. Fish & Game 50(3): 148-151, 1 fig. July 1964. WR 115: 9

[Calif. Dept. Fish & Game, Sacramento.] A description of the leader measurement method which was developed to supplant the visual estimate method.

Hori, John. AN AUTOMATIC INCUBATION RECORDER FOR WILDFOWL. 15th Ann. Rept. Wildfowl Trust 1962-63. p. 97-99. 1964. WR 115: 9

The nest was placed on a beam balance which was electrically connected with an eight-day clock. A waxed-paper tape was driven by the clock at the rate of one inch per hour. A pointer made a continuous mark on the tape, the relative position of the mark indicating whether the bird was on or off the nest.

Linn, Ian. A THEORY OF SMALL MAMMAL INDEX TRAPPING. Proc. 16th Intern. Congr. Zool. 1: 268. [1964]. WR 115: 9

[The Univ., Exeter, England.] A reasonably reliable small mammal density index can be obtained through use of a short, dense line of traps operated only 24 hours. Fifty traps were set in 10 groups of 5 traps each. Each group of 5 traps was set within a circle 2 meters in diameter, and groups were spaced at 5 meter intervals.

Long, Charles A. MATHEMATICAL FORMULAS EXPRESSING FAUNAL RESEMBLANCE. Trans. Kans. Acad. Sci. 66(1): 138-140. 1963. [From J. Mammal. 45(3), 1964.] WR 115: 9

Mann, Grady E. IMPROVED TECHNIQUES FOR AERIAL WETLAND SURVEYS. J. Wildl. Mgmt. 28(3): 575-580, 4 figs. July 1964. WR 115: 9

[Bur. Sport Fisheries & Wildl., Fergus Falls, Minn.] Abstract: Techniques used in an intensive aerial wetland survey of more than 13,000 square miles of western Minnesota pothole range in 1961-62 are reported. Need for the survey resulted from the accelerated prairie pothole acquisition program of the Fish and Wildlife Service. We used wetland types described by Martin et al. (1953: 3-6). Using light aircraft and experienced charter pilots, two men with thorough knowledge of the territory were able to cover the area in two seasons. Flights 1,200-1,300 feet above ground level, averaging 70 miles per hour, proved most satisfactory. Complete coverage of all sections in a township by the 1-mile-wide inspection method took approximately 20-25 minutes. Completed township platsheets with standardized survey information provided a biological basis for systematic negotiation for purchase of fee title and easements of waterfowl marshes. This aerial technique proved to be an economical, rapid, and accurate method to locate and establish acquisition priorities.

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Pienaar, U. de V., and J. W. van Niekerk. THE CAPTURE AND TRANSLOCATION OF THREE SPECIES OF WILD UNGULATES IN THE EASTERN TRANSVAAL WITH SPECIAL REFERENCE TO RO5-2807/B-5F (ROCHE) AS A TRANQUILLIZER IN GAME ANIMALS. Koedoe 6: 83-90, 5 figs. 1963. WR 115: 10

[Kruger Natl. Park, Skukuza, Republic South Africa.] Animals were captured by driving them into nets which fell and entangled the animals on impact. The tranquilizer was administered after capture of the animal.

van Niekerk, J. W., and U. de V. Pienaar. A REPORT ON SOME IMMOBILIZING DRUGS USED IN THE CAPTURE OF WILD ANIMALS IN THE KRUGER NATIONAL PARK. Koedoe 6: 126-133 + 8 figs. on 4 pls. 1963. WR 115: 10

[Kruger Natl. Park, Skukuza, Republic South Africa.] A report of results in field tests with the following drugs: Sernyl (piperidine hydrochloride), Flaxedil (gallamine triethiodide), and Omnopon (a drug incorporating all alkaloids of opium in their natural proportions) on giraffe, impala, buffalo, wildebeest, hippopotamus and baboon.

van Niekerk, J. W., U. de V. Pienaar, and N. Fairall. A PRELIMINARY NOTE ON THE USE OF QUILOFLEX (BENZODIOXANE HYDROCHLORIDE) IN THE IMMOBILIZATION OF GAME. Koedoe 6: 109-114 + 9 figs. on 6 pls. 1963. WR 115: 10

[Kruger Natl. Park, Skukuza, Republic South Africa.] Dosages, effects, and advantages of Quiloflex for immobilizing impala (Aepyceros melampus) and giraffe (Giraffe camelopardalis) are discussed.

WILDLIFE--MANAGEMENT & RESEARCH, GENERAL

Barick, Frank B. POVERTY AND WILDLIFE. Wildl. in N. C. 28(7): 17-20, illus. July 1964. WR 115: 10

[N. C. Wildl. Resources Comm., Raleigh.] The wildlife resource in N. C. can be made to produce an additional income of $100,000,000. "In order to secure the full benefits that wildlife can contribute to our economy we must (1) see to it that wild areas are not destroyed in the name of progress, (2) strengthen laws and regulations to increase production and (3) expand the opportunity for harvest."

N. Mex.-Ariz. Sec. Wildl. Soc. PROCEEDINGS OF THE THIRD ANNUAL CONFERENCE OF THE NEW MEXICO-ARIZONA SECTION OF THE WILDLIFE SOCIETY, SAFFORD, ARIZONA, FEBRUARY 7-8, 1964. v + 85 p. [1964.] Available from Robert A. Jantzen, Scottsdale, Ariz. WR 115: 10

Papers and associated discussion of the following titles are included: Game ranching in Southern Rhodesia, Lyle Sowls; Problems in the use of herd classification data, O. C. Wallmo; The federal aid program--outlook for the future, Ernie Martin; Pesticide wildlife problems, Richard Pillmore; The role of predator control in game management, Warren Bloys; Sagebrush and pinyon-juniper control as a game habitat improvement practice, Samuel H. Lamb; What constitutes proper level of browse use?, Don J. Neff; Predicting Gambel quail hunter success from call counts, Ron Smith; The Mearn's quail hunt from a sportsman's viewpoint, Seymour Levy; Population figures of Arizona's Mearn's quail, Rick Bishop; Problems in the use of Cap-Chur equipment and immobilizing drugs, Gerald I. Day; Development and application of the lens-weight aging technique in mule deer, Parry A. Larsen; The new look in timber harvesting--possible effects on wildlife, Doug Morrison; Fisheries research in Caballo Reservoir following rehabilitation, David J. Ozmina; The abundance and distribution of javelina in Southwestern New Mexico, Byron R. Donaldson. Conference discussions are also included.

WILDLIFE--HUNTING AREAS & PROBLEMS

Lincoln, Alexander, Jr. AN ENDLESS CONFLICT / THE HUNTER AND THE LANDOWNER. Am. Forests 70(8): 40. Aug. 1964. WR 115: 11
Administrative planning must give greater consideration to rewarding private landowners, states, and nations producing mobile game, if full interest in production is to be attained. As a step to protect landowners from unwanted trespassing by hunters, N. H. hunting and fishing licenses carry a warning of license revocation for trespass violation. The landowner simply need report the violation to the local police or conservation officer.

WILDLIFE--FOOD HABITS & TECHNIQUES

Kostelecka-Myrcha, Alina, and Andrzej Myrcha. CHOICE OF INDICATOR IN THE INVESTIGATION OF THE PASSAGE OF FOODSTUFFS THROUGH THE ALIMENTARY TRACT OF RODENTS. Acta Theriologica 9(5): 55-65, 4 figs. 30 May 1964. In English with Polish summ. WR 115: 11

WILDLIFE--PREDATION, CROP DAMAGE, CONTROL

Balser, Donald S. ANTIFERTILITY AGENTS IN VERTEBRATE PEST CONTROL. Second Vertebrate Pest Control Conf., March 4 and 5, 1964, Anaheim, Calif. p. 133-138. 1964. WR 115: 11
[Bur. Sport Fisheries & Wildl., Denver, Colo.] Of 20 female coyotes in breeding condition in an area where diethylstilbestrol-treated bait was placed, 4 successfully bred; all of 13 similar females successfully bred in an area where diethylstilbestrol was not used. [See WR 114: 8 for similar paper covering the same material.]

Davis, D. H. S. NOTES ON SOME SMALL MAMMALS IN THE KALAHARI GEMSBOK NATIONAL PARK, WITH SPECIAL REFERENCE TO THOSE PREYED UPON BY BARN OWLS. Koedoe 1: 184-188. 1958. WR 115: 11
[Union Health Dept., P. O. Box 1038, Johannesburg, Transvaal, Union South Africa.] Small mammal populations were studied through the analysis of owl pellet collections.

Eloff, F. C. ON THE PREDATORY HABITS OF LIONS AND HYAENAS. Koedoe 7: 105-112. 1964. WR 115: 11
[Univ. Pretoria, Pretoria, Transvaal, Union South Africa.] The lion (Panthera leo) is described as killing the gemsbok by approaching from the rear, jumping on the prey animal, and breaking its back at the lumbo-sacral joint by an upward pull with the mouth. Spotted hyenas (Crocuta crocuta) in Kalahari Gemsbok Park are chiefly hunters rather than scavengers, and they feed chiefly on gemsboks. Gemsboks were usually run down and overpowered by the pack-hunting hyenas.

Frings, Hubert. SOUND IN VERTEBRATE PEST CONTROL. Second Vertebrate Pest Control Conf., March 4 and 5, 1964, Anaheim, Calif. p. 50-56. 1964. WR 115: 11
[Univ. Hawaii, Honolulu.] The author expressed the belief that acoustical pest control is a neglected field which holds great promise.

Hermann, G., and W. M. Zeck. THE ROLE OF INDUSTRY IN DEVELOPING NEW MATERIALS FOR VERTEBRATE PEST CONTROL. Second Vertebrate Pest Control Conf., March 4 and 5, 1964, Anaheim, Calif. p. 9-15. 1964. WR 115: 11
[Vertebrate Control Lab., Farbenfabriken Bayer, Germany.] The development of commonly used rodenticides and the contributions of industrial and government agencies toward this development are discussed.

Hey, Douglas. THE CONTROL OF VERTEBRATE PROBLEM ANIMALS IN THE PROVINCE OF THE CAPE OF GOOD HOPE, REPUBLIC OF SOUTH AFRICA. Second Vertebrate Pest Control Conf., March 4 and 5, 1964, Anaheim, Calif. p. 57-70. 1964. WR 115: 12

[Dept. Nature Conservation, P. O. Box 659, Cape Town, South Africa.] Predation by the black-backed jackal (Canis mesomelas) presents a major problem to the sheep rancher in South Africa. It is estimated that nearly 10% of South Africa's 40 million sheep may be annually lost to predation. Use of the bounty system, started in South Africa in 1656, is being abandoned as ineffective. Government provision of hunter and trapper training courses and use of the American Coyote Getter in conjunction with 1080 are the adopted means of predator control.

Howard, Walter E. ANIMAL CONTROL IN NEW ZEALAND. Second Vertebrate Pest Control Conf., March 4 and 5, 1964, Anaheim, Calif. p. 117-126. 1964. WR 115: 12

[Univ. Calif., Davis.] Summary: New Zealand has experienced some acute problems as a result of introducing so many species of mammals. Current control methods are quite well developed, but even better organization and methodology are still required to provide additional relief from a number of the problem vertebrates. The problems and the methods of control are described briefly.

Leopold, A. Starker, Stanley A. Cain, Clarence M. Cottam, Ira N. Gabrielson, and Thomas L. Kimball. THE WAR ON AMERICA'S WILDLIFE / PART 1. [FROM A REPORT ON PREDATOR AND RODENT CONTROL IN THE UNITED STATES.] Audubon Magazine 66(4): 228-233, illus. July-Aug. 1964. WR 115: 12

[Univ. Calif., Berkeley.] A condensed version of a report to the Secretary of the Interior by his Advisory Board on Wildlife Management. Most control methods developed by the U. S. Fish & Wildlife Service, Branch of Predator & Rodent Control, were considered to be acceptable, but control was considered to be practiced far in excess of justifiable needs.

Pitelka, Frank A. PREDATION IN THE LEMMING CYCLE AT BARROW, ALASKA, 1951-63. Proc. 16th Intern. Congr. Zool. 1: 265. [1964]. WR 115: 12

[Univ. Calif., Berkeley.] Predation was the chief cause of lemming (Lemmus trimucronatus) mortality during population peaks in 1953, 1956 and 1960, but predator effects were superimposed on the basic lemming-vegetation interaction and were not important in causing lemming decline.

SECOND VERTEBRATE PEST CONTROL CONFERENCE, MARCH 4 AND 5, 1964, CHARTER HOUSE HOTEL, ANAHEIM, CALIFORNIA. xi + 160 p., mimeo. 1964. $2.75, paper, from Maynard W. Cummings, Univ. Calif., Davis. WR 115: 12

Contains 23 papers, most of which are individually covered in this issue of WR.

Spear, Philip J. THE ROLE OF PEST CONTROL OPERATORS IN VERTEBRATE PEST CONTROL. Second Vertebrate Pest Control Conf., March 4 and 5, 1964, Anaheim, Calif. p. 16-23. 1964. WR 115: 12

[250 West Jersey St., Elizabeth, N. J.] The profit-making side of the pest control industry is discussed. The five most-used rodenticides are as follows: anticoagulants, DDT dust, zinc phosphide, calcium cyanide, and 1080. Most business involves commensal rodents. Requests for bird control have greatly increased in the last 6-8 years, but bird control presents special problems to the pest control operator because of the public relations angle of treatment and because of lack of a generally acceptable control method.

Spencer, Donald A. TESTING AND REGISTRATION OF NEW CONTROL MATERIALS. Second Vertebrate Pest Control Conf., March 4 and 5, 1964, Anaheim, Calif. p. 3-8. 1964. WR 115: 12

[13508 Sherwood Forest Terrace, Silver Spring, Md.] Procedures for testing and registering new chemical pesticides as specified by the Federal Insecticide, Fungicide and Rodenticide Act are described.

Watt, Kenneth E. F. ANIMAL POPULATION ECOLOGY AND CONTROL FUNDAMENTALS. Second Vertebrate Pest Control Conf., March 4 and 5, 1964, Anaheim, Calif. p. 24-28, illus. 1964. WR 115: 13

[Univ. Calif., Davis.] There are built in genetic, physiological, population and environmental factors which enhance the performance of animal populations after some control measures have been applied. What is needed is some self-accelerating method that forces populations down by eroding their homeostatic capability. The new genetic and biological control methods fall within this pattern.

Wright, Percy F. BAIT MIXING EQUIPMENT USED IN VERTEBRATE PEST CONTROL. Second Vertebrate Pest Control Conf., March 4 and 5, 1964, Anaheim, Calif. p. 97-98. 1964. WR 115: 13

[3215 Nielsen Rd., Santa Rosa, Calif.] Concrete mixers are most commonly used for mixing poison and food used in vertebrate pest control.

WILDLIFE--REPORTS OF ORGANIZATIONS & REPORTS OF HARVESTS

Arizona. [ARIZONA GAME AND FISH DEPT., ANNUAL REPORT, 1962-1963.] Ariz. Wildl. Views 11(1): 1-63, illus. Jan.-Feb. 1964. WR 115: 13

Entire issue devoted to annual report. The game management section covers success in hunting big game, small game and waterfowl. A section on research gives brief discussions on techniques, disease, population dynamics and carrying capacity. Under the heading of Statewide Development, is a brief discussion of the state's game-watering program. A general report from the Ariz. Coop. Wildl. Res. Unit indicates the areas of activity of this agency.

Boyd, Hugh, editor. THE FIFTEENTH ANNUAL REPORT OF THE WILDFOWL TRUST 1962-3. Printed for Wildfowl Trust (Slimbridge, Gloucestershire, England) by Tillotsons (Bolton), Ltd., Bolton and Bristol, England. 149 p., illus. + 24 pls. 1964. Price 17 shillings and sixpence. WR 115: 13

This annual report is divided into three sections, with section 1 being essentially a business report. Section 2, a Year-book for 1963, contains three parts as follows: Effects of the cold winter of 1962-63 upon wildfowl in Britain (11 papers), Research and conservation in Great Britain (12 papers), Research and conservation overseas (8 papers). Section 3 is a collection of photographs of waterfowl and research equipment. The various papers are individually entered in this issue of WR.

Cringan, A. T. THE ONTARIO WATERFOWL RESEARCH FOUNDATION. 15th Ann. Rept. Wildfowl Trust 1962-63. p. 139-140. 1964. WR 115: 13

[Ontario Waterfowl Res. Foundation, Guelph, Ontario, Canada.] "A group of interested sportsmen and wildlife biologists formed the Ontario Waterfowl Research Foundation in 1961. The Foundation's aim is improved waterfowl management in Ontario. It seeks to achieve this by supporting basic research in waterfowl biology, training students as biologists and managers, and distributing results of research for application."

Kruger National Park. ANNUAL REPORT OF THE BIOLOGIST, 1958/1959. Koedoe 3: 1-205, 1 map. 1960. WR 115: 13

Consists chiefly of notes, under families, on the abundance and distribution of the vertebrate fauna of Kruger National Park (p. 6-101). Notes are given on reproduction of mammals, disease, and mortality (p. 114-127). Plants eaten by various types of mammals are tabulated (p. 128-167). There are discussions on predator control (p. 167-171), game movement (p. 171-173), and veld burning research (p. 173-194).

WETLANDS & WILDLIFE

Hoffmann, Luc. [SCIENTIFIC USE OF NATURAL AREAS.] RESEARCH IN WETLAND RESERVES. Proc. 16th Intern. Congr. Zool. 3: 400-405. [1964]. WR 115: 14
[Station Biologique de la Tour du Valat, par le Sambuc, B.d.Rh., France.]

Proctor, Vernon W. VIABILITY OF CRUSTACEAN EGGS RECOVERED FROM DUCKS. Ecology 45(3): 656-658. Summer 1964. WR 115: 14
[Texas Technol. Coll., Lubbock.] A wide variety of viable crustacean eggs has been recovered from the lower digestive tracts of wild and domesticated ducks. Ingestion by ducks would appear to be an effective means for dispersal of many species of fresh water crustaceans.--From abstr.

FARMLAND & WILDLIFE

Russell, Dan M. WILDLIFE WOES / A PUBLICATION OF THE FARM GAME PROJECT. Ky. Dept. Fish & Wildl. Resources Project W-37-D. 38 p., illus. 1 Feb. 1964. WR 115: 14
Cartoons with brief accompanying texts are used to point out some of the current problems in wildlife management. Conflict of interests of different groups is inherent in all of the problems cited. "How can it be otherwise when some government agencies are attempting to manage public-owned wildlife on private-owned lands and at the same time other government agencies are attempting to manage private-owned lands with public money?"

Vohs, Paul A., Jr. WIDE-ROW CORN AS WILDLIFE HABITAT. Occas. Papers C. C. Adams Center Ecol. Studies no. 12. 29 p. Sept. 1964. WR 115: 14
[Iowa State Univ., Ames.] Yields of corn were usually only slightly less with rows 60 inches apart than with rows 40 inches apart. Wide-row spacing, with grass or legume plantings between the corn rows, holds advantages to the farmer of affording increased protection from soil erosion, natural production of nitrogen, production of more organic material for soil-building, and production of additional pasture. Bobwhites, cottontails, and mourning doves used the areas with wide-row plantings significantly more than the areas with conventional narrow-row plantings. "Growing wide-row corn is a sound agricultural practice and an excellent wildlife management tool for improving habitat in row crop fields."

RANGELAND & WILDLIFE

Monod, Th. [SCIENTIFIC USE OF NATURAL AREAS.] RESEARCH IN DESERT RESERVES. Proc. 16th Intern. Congr. Zool. 3: 412-417. [1964]. In French. WR 115: 14
[Inst. Francais d'Afrique Noire, Dakar, Senegal.]

FORESTLAND--FORESTRY & ECOLOGY

Boyer, William D. LONGLEAF PINE SEED PREDATORS IN SOUTHWEST ALABAMA. J. Forestry 62(7): 481-484, 3 figs. July 1964. WR 115: 14
[U. S. Forest Serv., Brewton, Ala.] In seedings of longleaf pine (Pinus palustris), 37-49% of seeds or seedlings were destroyed by animals during 1958, 1959 and 1960. Small mammals were responsible for an average of 58% of losses; birds and large mammals, 33%; and insects, 9%.

Säisä, Pertti. HAVAINTOJA METSÄNHOIDON VAIKUTUKSESTA RIISTAKANTOIHIN. [OBSERVATIONS ON THE INFLUENCE OF FOREST MANAGEMENT UPON DENSITY OF GAME.] Suomen Riista 16: 120-127, 6 figs. 1963. [In Finnish with English summ.] WR 115: 14
About two years after the application of modern forest management practices on an area, increases in population occurred among black grouse (Lyurus tetrix), willow grouse (Lagopus lagopus) and capercaillie (Tetras urogallus). There was a decrease for hazel grouse (Tetrastes bonasia).--From summ.

FORESTLAND--MANAGEMENT FOR & DAMAGE BY WILDLIFE

Kverno, Nelson B. FOREST ANIMAL DAMAGE CONTROL. Second Vertebrate Pest Control Conf., March 4 and 5, 1964, Anaheim, Calif. p. 81-89. 1964. WR 115: 15

[Bur. Sport Fisheries & Wildl., Denver, Colo.] A discussion of damage by rodents to seeds of Douglas fir (Pseudotsuga menziesii), ponderosa pine (Pinus ponderosa), and black walnut (Juglans nigra). Damages by browsing of snowshoe hare (Lepus americanus), mountain beaver (Aplodontia rufa), deer (Odocoileus spp.) and elk (Cervus canadensis), and damage by meadow mice (Microtus spp.), bears and porcupines to tree roots and bark are also discussed. Includes three formulas for control treatments.

STRIPPED LAND & MISCELLANEOUS HABITATS

Jordan, Paul R. KENTUCKY'S NEW STRIP MINE ACT DESIGNED TO PREVENT STREAM POLLUTION; RESTORE ECONOMIC AND ESTHETIC VALUE OF LAND. Ky. Happy Hunting Ground 20(4): 20-22, illus. July 1964. WR 115: 15

[Dept. Fish & Wildl. Resources, Frankfort, Ky.] Ky. now has a more restrictive law on coal strip mining operations. Compared with former laws, the new law requires more extensive reclamation work, increases the amounts of performance bonds and acreage fees, and compels operators to file an acceptable plan of reclamation before a permit is issued by the state. The new Ky. law is still less restrictive than that of Pa.

Roseberry, John L., and W. D. Klimstra. RECREATIONAL ACTIVITIES ON ILLINOIS STRIP-MINED LANDS. J. Soil & Water Conserv. 19(3): 107-110, illus. May-June 1964. WR 115: 15

"More than 4,000 acres of land are being excavated annually for open-cut mining in Illinois. A portion of the resulting spoil areas might well be developed to meet increasing needs for recreational space contend the authors of this article. Herein, they detail the current use of the more than 108,000 acres of strip-mined land in the state, and they describe the recreational use now being made of stripped areas."

CONTROL OF VEGETATION WITH HERBICIDES, ETC.

McCorkle, C. O., Jr., A. H. Murphy, Lynn Rader, and D. D. Caton. COST OF TREE REMOVAL THROUGH CHEMICALS. J. Range Mgmt. 17(5): 242-244. Sept. 1964. WR 115: 15

[Univ. Calif., Davis.] "Four things must be known to estimate cost of chemical tree treatment: labor performance rates, quantity of material, wage rate, and unit cost of material. Labor and material requirements are related to tree diameter, stand density, and species treated."

MAMMALS--GENERAL

Ansell, W. F. H. ADDITIONAL BREEDING DATA ON NORTHERN RHODESIAN MAMMALS. Puku 1: 9-28, [2 figs.]. 1963. WR 115: 15

This paper supplements an earlier publication by the same author on the Mammals of Northern Rhodesia, published by the Northern Rhodesia Government Printer, Lusaka, in 1960.

Bartholomew, George A. [BEHAVIORAL ADAPTATIONS OF MAMMALS TO ENVIRONMENTS.] BEHAVIORAL ADAPTATIONS OF MAMMALS TO THE DESERT ENVIRONMENT. Proc. 16th Intern. Congr. Zool. 3: 49-52. [1964]. WR 115: 15

[Univ. Calif., Los Angeles.]

Dulic, Beatrica. MAMMAL DISTRIBUTION AND ITS RELATIONSHIPS TO THE PLANT COVER. Proc. 16th Intern. Congr. Zool. 1: 266. [1964]. WR 115: 16
[Zool. Inst. Univ., Zagreb, Yugoslavia.] Small mammals were most abundant in oak woods and least abundant in pine woods. There were more species but fewer individuals in oak woods than in beech and fir woods.

Hall, E. Raymond. INTRODUCTION OF EXOTIC SPECIES OF MAMMALS. Proc. 16th Intern. Congr. Zool. 1: 267. [1964]. WR 115: 16
[Univ. Kans., Lawrence.] "Introducing exotic species of vertebrates is unscientific, economically wasteful, politically short-sighted, and biologically wrong."

Keast, Allen. MAMMALIAN EVOLUTION ON THE SOUTHERN CONTINENTS / INTRODUCTION TO SPECIAL SYMPOSIUM. Proc. 16th Intern. Congr. Zool. 4: 37-39. [1964]. WR 115: 16
[Queen's Univ., Kingston, Ontario, Canada.]

Ryan, R. Mark. THE BIOTIC PROVINCES OF CENTRAL AMERICA AS INDICATED BY MAMMALIAN DISTRIBUTION. Acta Zool. Mexicana 6(2-3): 1-54. 1963. [From J. Mammal. 45(3), 1964.] WR 115: 16

Taber, Richard D., and Robert S. Hoffmann. [BEHAVIORAL ADAPTATIONS OF MAMMALS TO ENVIRONMENTS.] BEHAVIORAL ADAPTATIONS OF MAMMALS TO MOUNTAIN ENVIRONMENTS. Proc. 16th Intern. Congr. Zool. 3: 54. [1964]. WR 115: 16
[Mont. State Univ., Missoula.]

MAMMALS--FAUNAS AND MANUALS

Ansell, W. F. H. ADDENDA AND CORRIGENDA TO "MAMMALS OF NORTHERN RHODESIA". Puku 2: 14-52. 1964. WR 115: 16
Chiefly on taxonomy and distribution with notes on habits, diet, and habitat.

Bateman, James A. THE MAMMALS OCCURRING IN THE BREDASDORP AND SWELLENDAM DISTRICTS, C.P., SINCE EUROPEAN SETTLEMENT / INCLUDING A LIST COMPARING THE TYPES IN THESE DISTRICTS WITH THOSE OF THE CRADOCK AND UITENHAGE DISTRICTS, C.P. Koedoe 4: 78-100. 1961. WR 115: 16
Report of a survey of the mammal population of the Bredasdorp and Swellendam Districts to be used in consideration of the feasibility of removal of the Bontebok National Park from its position near Cradock and Uitenhage Districts to a position nearer to the town of Swellendam.

Bigalke, R. C. [MAMMALIAN EVOLUTION ON THE SOUTHERN CONTINENTS.] THE LIVING MAMMALS OF AFRICA. Proc. 16th Intern. Congr. Zool. 4: 52-55. [1964]. WR 115: 16
[Alexander McGregor Museum, Kimberley, South Africa.]

Deacon, James E., William G. Bradley, and Karl M. Larsen. ECOLOGICAL DISTRIBUTION OF THE MAMMALS OF CLARK CANYON, CHARLESTON MOUNTAINS, NEVADA. J. Mammal. 45(3): 397-409. Aug. 1964. WR 115: 16
[Univ. Nev., Las Vegas.] A list of 33 spp. with miscellaneous annotations.

Dixon, J. E. W. PRELIMINARY NOTES ON THE MAMMAL FAUNA OF THE MKUZI GAME RESERVE. Lammergeyer 3(1): 40-58. Feb. 1964. WR 115: 16
Status of population is given for 69 spp. There are few small mammals, but there is an over-population of large mammals of various game species. When possible, estimates are given of mammal numbers. A list of parasites is included.--From summ.

MAMMALS--FAUNAS AND MANUALS--Continued

Herskovitz, Philip. [MAMMALIAN EVOLUTION ON THE SOUTHERN CONTINENTS.] THE RECENT MAMMALS OF SOUTH AMERICA. Proc. 16th Intern. Congr. Zool. 4: 40-45. [1964]. WR 115: 17

[Chicago Nat. Hist. Museum, Chicago, Ill.] An analysis of the 826 neotropical and 442 nearctic species reported for South America.

Keast, Allen. [MAMMALIAN EVOLUTION ON THE SOUTHERN CONTINENTS.] THE MAMMAL FAUNA OF AUSTRALIA. Proc. 16th Intern. Congr. Zool. 4: 56-62. [1964]. WR 115: 17

[Queen's Univ., Kingston, Ontario, Canada.] Australia has 78 spp./one million sq. mile as compared with Africa's 109 spp./one million sq. mile.

Long, Charles A. THE MAMMALS OF WYOMING. Ph.D. thesis, Univ. Kans. 541 p. 1963. [From abstr. in Dissertation Abstr. 24(12, pt. 1), 1964.] WR 115: 17

More than 12,000 specimens of recent mammals examined from Wyoming reveal 169 kinds (including subspecies) of 99 species of 58 genera of 22 families of seven orders. Four of the 99 species were introduced directly or indirectly by man.--From abstr.

Pienaar, U. de V. THE LARGE MAMMALS OF THE KRUGER NATIONAL PARK -- THEIR DISTRIBUTION AND PRESENT-DAY STATUS. Koedoe 6: 1-37 + 36 figs. on 19 pls. 1963. WR 115: 17

[Kruger Natl. Park, Skukuza, Republic South Africa.] Resumé: The distribution of the large mammals of the Kruger National Park is considered. The most important features of the zoogeography of each species are discussed in the light of their specific ecological affinities. Distribution data and locality records compiled over a period of five years are presented in a series of distribution maps, and an indication of the present-day status of each species, based on population data accumulated over a long period, is provided.

Pienaar, U. de V. THE SMALL MAMMALS OF THE KRUGER NATIONAL PARK -- A SYSTEMATIC LIST AND ZOOGEOGRAPHY. Koedoe 7: 1-25, 52 maps. 1964. WR 115: 17

[Kruger Natl. Park, Skukuza, Republic South Africa.] With notes on distribution, habitats, habits, food, and breeding behavior for the insectivora, chiroptera, pholidota, carnivora, tubulidentata, hyracoidea, lagomorpha, and rodentia. Fifty-two distribution maps are included.

Shou Chen-Huang, editor. CHINESE MAMMALS OF ECONOMIC IMPORTANCE. Sci. Publishing Co. (Peking). xiii + 554 p. + 72 pls. 1962. [From J. Mammal. 45 (3), 1964. In Chinese.] WR 115: 17

Skead, C. J. MAMMALS OF THE UITENHAGE AND CRADOCK DISTRICTS C.P. IN RECENT TIMES. Koedoe 1: 19-59. 1958. WR 115: 17

[Kaffrarian Museum, Kingwilliamstown, Cape Province, Union South Africa.] A review of available information on the occurrence of the various mammals in the Cradock and Uitenhage Districts from about 1770 to 1956. For the Cradock District 78 mammal forms have been recorded and for the Uitenhage District 97. Some carnivores and ungulates are alloted more detailed discussions than the smaller mammals. More than 30 references are cited.

MAMMALS--POPULATIONS, HOME RANGES, COMMUNITIES

Andersen, Johs. [THE REGULATION OF NUMBERS IN NATURAL POPULATIONS.] POPULATIONS OF HARE AND ROE-DEER IN DENMARK. Proc. 16th Intern. Congr. Zool. 3: 347-351. [1964]. WR 115: 17

[Game Biol. Sta., Kalö, Rönde, Denmark.]

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Howard, Walter E. INTRODUCED BROWSING MAMMALS AND HABITAT STABILITY IN NEW ZEALAND. J. Wildl. Mgmt. 28(3): 421-429, 4 figs. July 1964. WR 115: 18
[Univ. Calif., Davis.] Abstract: The introduction of the red deer (Cervus elaphus), an Australian opossum (Trichosurus vulpecula), and other species into New Zealand provides a classical example of how introduced browsing mammals under certain conditions can upset the natural stability of wildlife habitats either temporarily or indefinitely by destroying the vegetation and causing extensive erosion. Two factors help explain why these introduced animals were so destructive to certain habitats. Some New Zealand plants have little innate resistance to heavy browsing pressure. Apparently this is because most of the flora is composed of species that are found only in that country and because they have evolved in the absence of browsing mammals, since no fossil or native land mammals occur there except bats and the kiore rat (Rattus exulans). A second factor is that some New Zealand soils are highly susceptible to erosion. Due to the destruction of certain plants, an irreversible change in the composition of the vegetation has occurred. A new and stable equilibrium of the animal-vegetation-soil complex has developed where browse-resistant and unpalatable plants have adequately replaced those that were destroyed by the browsing mammals. To stabilize the remaining habitats may require either intensive artificial control of the mammals, the practicing of modern game management principles, reseeding with exotic plants where native species cannot withstand the new environmental conditions, or a combination of these. It is not a realistic objective either to attempt to reestablish the original palatable plants in some areas or to try and eradicate these wild mammals from New Zealand.

Leistner, O. A. NOTES ON THE VEGETATION OF THE KALAHARI GEMSBOK NATIONAL PARK WITH SPECIAL REFERENCE TO ITS INFLUENCE ON THE DISTRIBUTION OF ANTELOPES. Koedoe 2: 128-151, 1 map. 1959. WR 115: 18
The plants in several communities are listed. Antelope use of some 23 spp. of plants is tabulated. Local movements of antelopes are correlated with food and water accessibility.

Pelikán, Jaroslav, Jan Zejda, and Věra Holišová. ON THE QUESTION OF INVESTIGATING SMALL MAMMAL POPULATIONS BY THE QUADRATE METHOD. Acta Theriologica 9(1): 1-24, 9 figs. 30 May 1964. In English with Polish summ. WR 115: 18
[Inst. Vertebrate Zool., Drobného 28, Brno, Czechoslovakia.]

MAMMALS--PARASITES AND DISEASES

Pienaar, U. de V. 'N UITBRAAK VAN MILTSIEKTE ONDER WILD IN DIE NASIONALE KRUGERWILDTUIN 28.9.59 TOT 20.11.59. [AN OUTBREAK OF ANTHRAX AMONGST WILD ANIMALS OF THE KRUGER NATIONAL PARK (28 SEPTEMBER 1959 - 20 NOVEMBER 1959).] Koedoe 3: 238-251. 1960. [In Afrikaans with English summ.] WR 115: 18
[Kruger Natl. Park, Skukaza, Republic South Africa.] For the first time, anthrax was found in South Africa in mammals, including several species each of ungulates and carnivores. Watering points were centers for disease contact; carnivorous and carrion-eating birds were responsible for spread. Fire was effective in curtailing spread of disease.

Pienaar, U. de V. A SECOND OUTBREAK OF ANTHRAX AMONGST GAME ANIMALS IN THE KRUGER NATIONAL PARK. 5TH JUNE TO 11TH OCTOBER, 1960. Koedoe 4: 4-16, 3 maps. 1961. WR 115: 18
[Kruger Natl. Park, Skukuza, Republic South Africa.] Covers magnitude and course of the epizoötic, pathogenicity, symptoms, sources of infection, and preventive measures. Reports of 1054 anthrax-infected carcasses involving 22 spp. were made.

SHREWS, MOLES, BATS

Allen, Rae, Ruth A. Sims, and S. Edward Sulkin. STUDIES WITH CULTURED BROWN ADIPOSE TISSUE. I. PERSISTENCE OF RABIES VIRUS IN BAT BROWN FAT. Am. J. Hyg. 80(1): 11-24, 4 figs. July 1964. WR 115: 19
[Univ. Texas Southwestern Med. School, Dallas.] This study supports the hypothesis that the interscapular brown adipose tissue of little brown bats (Myotis lucifugus) is capable of sustaining rabies infection and thus contributing to the ability of this mammal to act as a natural reservoir for rabies virus.

Allen, Rae, Ruth A. Sims, and S. Edward Sulkin. STUDIES WITH CULTURED BROWN ADIPOSE TISSUE. II. INFLUENCE OF LOW TEMPERATURE ON RABIES VIRUS INFECTION IN BAT BROWN FAT. Am. J. Hyg. 80(1): 25-32, 6 figs. July 1964. WR 115: 19
[Univ. Texas Southwestern Med. School, Dallas.] Rabies virus survived but did not multiply when held at 8 C in cultures of interscapular brown fat of little brown bats (Myotis lucifugus).

Davis, Wayne H., and Harold B. Hitchcock. NOTES ON SEX RATIOS OF HIBERNATING BATS. J. Mammal. 45(3): 475-476. Aug. 1964. WR 115: 19
[Univ. Ky., Lexington.] Hibernating female big brown bats (Eptesicus fuscus) and little brown bats (Myotis lucifugus) gathered into clusters less and occupied warmer parts of the cave than males.

Davis, William B., Dilford C. Carter, and Ronald H. Pine. NOTEWORTHY RECORDS OF MEXICAN AND CENTRAL AMERICAN BATS. J. Mammal. 45(3): 375-387, 1 fig. Aug. 1964. WR 115: 19
[Texas A & M Univ., College Station.] Abstract: Twenty-seven species of bats which are rare in collections and/or which constitute noteworthy records of range extension are discussed. Two are new to México: 8 to Chiapas, 3 to Veracruz, 4 to Honduras, 6 to Nicaragua, one to Panamá, 2 to Guatemala. The systematic status of Sturnira mordax (Goodwin) is discussed. Weights, measurements and biological data are included for most species.

de Graaff, G. ON THE NEST OF CRYPTOMYS HOTTENTOTUS IN THE KRUGER NATIONAL PARK. Koedoe 5: 157-161, illus. 1962. WR 115: 19
A description of the nest of a mole rat.

de Graaff, G. ON THE PARASITES ASSOCIATED WITH THE BATHYERGIDAE. Koedoe 7: 113-121. 1964. WR 115: 19
[Univ. Pretoria, Pretoria, Transvaal, Union South Africa.] Observations on endo- and ectoparasites found in and on Cryptomys in the Kruger National Park.

Findley, James S., and Clyde Jones. SEASONAL DISTRIBUTION OF THE HOARY BAT. J. Mammal. 45(3): 461-470, 17 figs. Aug. 1964. WR 115: 19
[Univ. N. Mex., Albuquerque.] Abstract: Distributional records of hoary bats, Lasiurus cinereus Peale and Beauvois, were assembled and mapped for each month. In North America females are seen to migrate northward somewhat earlier than males and to occupy an eastern summering ground where young are born, while males are concentrated in western North America. Fall migration begins in August. Spring and fall migratory waves have been noted, some segregated as to sex. Some South American hoary bats migrate, while others may be non-migratory.

Greenhall, Arthur M. BATS: THEIR PUBLIC HEALTH IMPORTANCE AND CONTROL WITH SPECIAL REFERENCE TO TRINIDAD. Second Vertebrate Pest Control Conf., March 4 and 5, 1964, Anaheim, Calif. p. 108-116. 1964. WR 115: 19
[U. S. Fish & Wildl. Serv., Washington, D. C.] A review of the public health importance of bats and methods of bat control.

Haitlinger, Ryszard, and Stanisław Humiński. SOREX ALPINUS SCHINZ, 1837 (MAMMALIA, SORICIDAE) W POLSCE. [SOREX ALPINUS SCHINZ, 1837 (MAMMALIA, SORICIDAE) IN POLAND.] Acta Theriologica 9(8): 111-123, 3 figs. 30 May 1964. In Polish with English summ. WR 115: 19
[Katedra Zool., Wyższej Szkoły Rolniczej, ul. Cybulskiego 20, Wrocław, Poland.]

Heatwole, Harold, Juan F. Arroyo-Salamán, and Gladys Hernández. ALBINISM IN THE BAT, MOLOSSUS FORTIS. J. Mammal. 45(3): 476. Aug. 1964. WR 115: 20
[Univ. Puerto Rico, Rio Piedras.] Two albino specimens were collected.

Leitner, Philip, George A. Bartholomew, and John E. Nelson. BODY TEMPERATURE REGULATION IN THREE SPECIES OF AUSTRALIAN FLYING FOXES. Proc. 16th Intern. Congr. Zool. 2: 55. [1964]. WR 115: 20
[St. Mary's Coll. Calif., St. Mary's College, Calif.] All 3 species (Pteropus poliocephalus, Pteropus scapulatus, and Syconycteris australis) maintain body temperatures within the normal mammalian range in ambient temperatures as low as 5°C. Neither species of Pteropus undergoes daily or seasonal periods of torpor, and there is no positive evidence that S. australis can become torpid.

RABBITS AND PIKAS

French, Norman R. ANALYSIS OF REPRODUCTION IN A BLACK-TAILED JACK RABBIT POPULATION. Proc. 16th Intern. Congr. Zool. 1: 258. [1964]. WR 115: 20
[Univ. Calif., Los Angeles.] Changes in reproduction were correlated with changing population density. As density increased the length of the breeding season decreased; as density increased, a smaller percentage of ♀♀ in population was pregnant; as density increased, fewer embryos were produced by the population. After a population decline, the breeding season was longer, a greater percentage of ♀♀ were pregnant, and the average number of embryos increased.

Ingersoll, Jean M. THE AUSTRALIAN RABBIT. Am. Sci. 52(2): 265-273. June 1964. WR 115: 20
A review of the history of the European wild rabbit (Oryctolagus cuniculus) in Australia. With the development of resistant strains of rabbits and less virulent strains of myxomatosis virus, the Australian rabbit problem is viewed as unsolved. There is need to capitalize on the reduction of the rabbit population caused by myxomatosis in the past decade through continued use of old methods of digging, fumigation, and the use of chemicals.

Johnson, Warren V. RABBIT CONTROL. Second Vertebrate Pest Control Conf., March 4 and 5, 1964, Anaheim, Calif. p. 90-96. 1964. WR 115: 20
[Calif. Dept. Agr., Fresno.] Contains several formulas for mixing poison baits for use in control of jack rabbits (Lepus californicus).

Lind, Esko A. JÄNIKSEN JA RUSAKON VÄLISISTÄ SUHTEISTA. [OBSERVATIONS ON THE MUTUAL RELATIONSHIP BETWEEN THE SNOW HARE (LEPUS TIMIDUS) AND THE FIELD HARE (L. EUROPAEUS).] Suomen Riista 16: 128-135, 5 figs. 1963. [In Finnish with English summ.] WR 115: 20
The snow hare inhabits forest habitats, the field hare field habitats, and the edge zone is inhabited by both species. Following disappearance of the field hare, the snow hare markedly extended its range into farmland habitat. This was associated with a population increase.--From summ.

Seiskari, Pertti. JÄNIKSEN KESÄRAVINNOSTA. [SUMMER FOOD OF THE SNOW HARE (LEPUS TIMIDUS).] Suomen Riista 16: 46-55, 5 figs. 1963. [In Finnish with English summ.] WR 115: 20
Preferred plants include various species of Trifolium, Lathyrus and Vicia. Preferred trees, of which the leaves and young shoots are eaten, include Salix caprea, Populus tremula and Sorbus aucuparia. It was estimated that an area of 100 m^2 of lush forbs can supply the food requirements of a snow hare during the growing season.--From summ.

Tiemeier, Otto W., and Marvin L. Plenert. A COMPARISON OF THREE METHODS FOR DETERMINING THE AGE OF BLACK-TAILED JACKRABBITS. J. Mammal. 45(3): 409-416, 2 figs. Aug. 1964. WR 115: 21

[Kans. State Univ., Manhattan.] "The lens-weight technique of age determination for jackrabbits is superior to age-determination techniques based on body size, total weight or the epiphyseal closure because the lens growth curve permitted determination of the month in which young jackrabbits were born and the month and year of birth of those older than one year."

Viereck, Eleanor G. METABOLISM OF SOME ALASKAN LAGOMORPHS. Proc. 16th Intern. Congr. Zool. 1: 264. [1964]. WR 115: 21

[Arctic Aeromedical Lab., Ft. Wainwright, Alaska.] The experimental change of coat color from white to brown had no effect on the ability of snowshoe hares (Lepus americanus) to endure cold, and an opportunity to huddle together offered no advantage to the hares in a cold environment. The ability of brown hares to maintain normal body temperature was slightly greater than that of white hares. Oxygen use in relation to ambient temperature was studied in 5 pikas (Ochotona collaris).

RODENTS--MISCELLANEOUS

Andrews, Richard D. THE GOLDEN MOUSE IN SOUTHERN ILLINOIS. Nat. Hist. Misc., Chicago Acad. Sci. 179: 1-3. 29 Dec. 1963. [From J. Mammal. 45(3), 1964.] WR 115: 21

Bongiorno, Salvatore F., and Paul G. Pearson. ORIENTATION OF PEROMYSCUS IN RELATION TO CHRONIC GAMMA RADIATION AND VEGETATION. Am. Midland Nat. 72(1): 82-92, 2 figs. July 1964. WR 115: 21

[Rutgers Univ., New Brunswick, N. J.] Abstract: Small mammals, particularly the white-footed mouse, Peromyscus leucopus, were live-trapped, marked and released in a radiated, natural oak-pine community at Brookhaven National Laboratory. Studies during the summer of 1961 evaluated the population prior to the start of daily radiation in November, 1961. The population was then studied in the summer of 1962 during radiation. No detectable effects of radiation were observed in the population. Lack of detectable effects of radiation may be attributed to: (1) a low population density and too few animals with which to work, and (2) a local nonrandom orientation of this species to certain parts of the radiated forest which resulted in its being found in areas away from the source; that is, they were found where levels of radiation were mostly below 3r/day. Habitat orientation in Peromyscus leucopus was found to be strongly associated with the 0.0-0.3 m shrub layer which consisted largely of Vaccinium angustifolium. Wherever cover of this shrub layer was thick, captures of the white-footed mouse were at a minimum. Higher capture success was recorded in areas where this shrub layer was not as abundant.

Brown, L. N. REPRODUCTION OF THE BRUSH MOUSE AND WHITE-FOOTED MOUSE IN THE CENTRAL UNITED STATES. Am. Midland Nat. 72(1): 226-240, 3 figs. July 1964. WR 115: 21

[Univ. Wyo., Laramie.] An investigation of the reproductive cycles of the brush mouse (Peromyscus boylii) and white-footed mouse (P. leucopus). Comparisons were also made of ovulation rates, litter size, extent of embryonic loss, length of gestation and other reproductive factors in the two species.

Brown, Larry N. DYNAMICS IN AN ECOLOGICALLY ISOLATED POPULATION OF THE BRUSH MOUSE. J. Mammal. 45(3): 436-442, 2 pls. Aug. 1964. WR 115: 21

[Univ. Wyo., Laramie.] Abstract: A live-trap study of the brush mouse, Peromyscus boylii attwateri, was conducted on an ecologically isolated cedar glade in the Missouri Ozarks. Population density varied from a high of 2.17 per acre in December 1961 to a low of 0.28 mouse per acre in August 1962. This decline appeared to result from a reproductive failure in the females coupled

with a normal mortality rate of resident mice. The failure of females to produce young during this breeding period could not be related to any obvious environmental or population condition. The survival rate at 4-month intervals (for 16 months) of 15 mice marked in August 1961 was 66.7%, 40.4%, 13.3% and 6.7%, respectively. The estimated mean life-span of 39 mice was 6.8 months and the estimated maximum life-span was 18.0 months. The absence of egress from the cedar glade by members of the population was deemed the significant factor in revealing the rather high survival rate and long life-span of brush mice. The average home range of adult brush mice was 0.49 acre. The home ranges of males averaged almost twice as large as those of females. Home ranges invariably had an elongated axis which coincided with the horizontal and parallel outcrops of dolomite which were present.

Couturier, Marcel A. J. CONTRIBUTION À L'ÉTUDE DU SOMMEIL HIBERNAL CHEZ LA MARMOTTE DES ALPES (MARMOTA MARMOTA MARMOTA L., 1758). [A CONTRIBUTION TO THE STUDY OF HIBERNATION IN THE ALPINE MARMOT (MARMOTA MARMOTA MARMOTA L., 1758).] Mammalia (Paris) 27(4): 455-482. Dec. 1963. [From J. Mammal. 45(3), 1964. (In French).] WR 115: 22

Dalquest, Walter W., and Glen Collier. NOTES ON DIPODOMYS ELATOR, A RARE KANGAROO RAT. Southwestern Nat. 9(3): 146-150. 20 Aug. 1964. WR 115: 22
[Midwestern Univ., Wichita Falls, Kans.] Dipodomys elator seems confined to 6 counties in north-central Texas and southern Oklahoma. It occupies mesquite scrubland, where other kinds of kangaroo rats would not be expected to occur.--From abstr.

Egoscue, Harold J. ECOLOGICAL NOTES AND LABORATORY LIFE HISTORY OF THE CANYON MOUSE. J. Mammal. 45(3): 387-396, 3 figs. Aug. 1964. WR 115: 22
[Univ. Utah, Dugway.] Abstract: The canyon mouse, Peromyscus crinitus pergracilis, was more difficult to rear in captivity than other cricetids. It is seasonally polyestrous in the laboratory, but young are born all months of the year. Gestation during lactation was 27-31 days; a limited amount of evidence indicates non-lactating pregnancies last approximately 24-25 days. Litter size ranges from 1-5; only one litter of 5 was recorded among 130 litters. Females had as many as 8 litters per year, average 2.05. Maximum reproductive lifetime of females was 46 months. Young are born in a slightly more advanced state than deer mice, but are not weaned until 4 weeks of age. A few pairs bred when only 70 days old; most breeders did not produce young until they were 4-6 months of age. Examples of catches from marginal, good and excellent canyon mouse habitat are given, together with associated small mammals from each.

Gebczyńska, Zofia. MORPHOLOGICAL CHANGES OCCURRING IN LABORATORY MICROTUS AGRESTIS WITH AGE. Acta Theriologica 9(6): 67-79, 4 figs. + 2 pls. 30 May 1964. In English with Polish summ. WR 115: 22
[Mammals Res. Inst., Białowieża, Poland.]

Gough, Bobby J., and S. S. Kilgore. A COMPARATIVE HEMATOLOGICAL STUDY OF PEROMYSCUS IN LOUISIANA AND COLORADO. J. Mammal. 45(3): 421-428, 2 figs. Aug. 1964. WR 115: 22
[USDA Meat Lab., Beltsville, Md.] Major hematological differences were found to occur between P. maniculatus at Gothic, Colorado and P. maniculatus at the Black Canyon, Colorado, and between P. gossypinus and P. nuttalli in Louisiana.--From abstr.

Grodziński, Władysław. CAN FOOD CONTROL THE NUMBERS OF SMALL RODENTS IN THE DECIDUOUS FOREST? Proc. 16th Intern. Congr. Zool. 1: 257. [1964]. WR 115: 22
[Jagiellonian Univ., Cracow, Poland.] Only 16.5% of the available supply of seed was exploited during the season of shortest food supply, and food alone was not the factor limiting small rodent populations.

Kikkawa, Jiro. MOVEMENT, ACTIVITY AND DISTRIBUTION OF THE SMALL RODENTS CLETHRIONOMYS GLARBOLUS AND APODEMUS SYLVATICUS IN WOODLAND. J. Animal Ecol. 33(2): 259-299, 13 figs. June 1964. WR 115: 23
[Univ. New England, Armidale, N.S.W., Australia.] Considers biological factors which may bias trap catches and thus limit reliability of marking-recapture method in population estimates and studies of home range.

Kostelecka-Myrcha, Alina, and Andrzej Myrcha. THE RATE OF PASSAGE OF FOODSTUFFS THROUGH THE ALIMENTARY TRACTS OF CERTAIN MICROTIDAE UNDER LABORATORY CONDITIONS. Acta Theriologica 9(4): 37-53, 3 figs. 30 May 1964. In English with Polish summ. WR 115: 23
With 40 references.

Nader, Iyad Abdul Wahab. AN ANALYSIS OF INTRASPECIFIC VARIATION IN THE KANGAROO RATS DIPODOMYS SPECTABILIS MERRIAM AND DIPODOMYS DESERTI STEPHENS. Ph.D. thesis, Univ. Ill. 227 p. 1964. [From abstr. in Dissertation Abstr. 24(12, pt. 1), 1964.] WR 115: 23
The two species are characterized and notes are given concerning their habitat, longevity, predators, parasites, molt, and reproductive activity.

Packard, Robert L., and Herschel Garner. ARBOREAL NESTS OF THE GOLDEN MOUSE IN EASTERN TEXAS. J. Mammal. 45(3): 369-374. Aug. 1964. WR 115: 23
[Texas Technol. Coll., Lubbock.] Descriptions of the nests and nest sites, with some observations on behavior of golden mice (Ochrotomys nuttalli) found in nests.--From abstr.

Pinter, Aelita Jurjevics. EFFECTS OF NUTRITION AND PHOTOPERIOD ON REPRODUCTIVE PHYSIOLOGY, GROWTH, AND MATURATION IN MICROTUS MONTANUS. Ph.D. thesis, Tulane Univ. 147 p. 1963. [From abstr. in Dissertation Abstr. 25 (1), 1964.] WR 115: 23
More young were produced by ♀♀ fed sprouted wheat every 3 days than by ♀♀ fed this food every 15 days. Sprouted wheat food enhanced growth rate of young under 18 hours of photoperiod but not under 6 hours. Sprouted wheat food enhanced sexual maturity of ♂♂ under both 6 and 18 hours photoperiod but of ♀♀ more under 18 than 6 hours. Diet had no effect on adrenal weight, but photoperiod did. Pelage growth was more rapid under 18 than 6 hours photoperiod and more rapid in ♂♂ than in ♀♀. Longer hair developed under 6 than 18 hours photoperiod.

Ruffer, David Gray. STUDIES ON THE ETHOLOGY OF THE NORTHERN GRASSHOPPER MOUSE (ONYCHOMYS LEUCOGASTER). Ph.D. thesis, Univ. Okla. 112 p. 1964. [From abstr. in Dissertation Abstr. 25(1), 1964.] WR 115: 23

Spitz, F. ÉTUDE DES DENSITÉS DE POPULATION DE MICROTUS ARVALIS PALL. À SAINT-MICHEL-EN-L'HERM (VENDÉE). [A STUDY OF THE POPULATION DENSITIES OF MICROTUS ARVALIS PALL. AT SAINT-MICHEL-EN-L'HERM (VENDEE).] Mammalia (Paris) 27(4): 497-531. Dec. 1963. [From J. Mammal. 45(3), 1964. (In French).] WR 115: 23

RATTUS AND MUS

Bentley, E. W. A FURTHER LOSS OF GROUND BY RATTUS RATTUS L. IN THE UNITED KINGDOM DURING 1956-61. J. Animal Ecol. 33(2): 371-373. June 1964. WR 115: 23
[Ministry Agr., Fisheries & Food, Tolworth, England.] The black rat population in Britain has continued to decline.

Brooks, Joe E. THE PRESENCE OF THE ROOF RAT, RATTUS RATTUS, IN SEWERS IN CALIFORNIA. Calif. Vector Views, State Dept. Public Health 10(11): 71-72. Nov. 1963. [From J. Mammal. 45(3), 1964.] WR 115: 23

Ecke, Dean H. ROOF RAT POPULATIONS IN SANTA CLARA COUNTY, CALIFORNIA. Second Vertebrate Pest Control Conf., March 4 and 5, 1964, Anaheim, Calif. p. 99-107, 4 figs. 1964. WR 115: 24

[Santa Clara Co. Health Dept., San Jose, Calif.] In connection with increased human residential development, habitat for and populations of roof rats (Rattus rattus) greatly increased in Santa Clara County, Calif. Educational efforts met with little success, and an organized health department effort was used before control was achieved in a limited area. Diphacine bait was used.--From summ.

Koren, Herman, and Newell E. Good. A STUDY OF THE CONTINUING EFFECTIVE KILLING POWER OF RED SQUILL. Pest Control 32(8): 24, 26, 29-30. Aug. 1964. WR 115: 24

[Philadelphia Dept. Public Health, Philadelphia, Pa.] The effective killing power of Red Squill was extended from 3 days to 2-4 weeks by the addition of cooking grade corn oil to the oats, cracked corn, and Red Squill mixture.

Smythe, William R. HAWAIIAN SUGAR CANE RAT CONTROL METHODS AND PROBLEMS. Second Vertebrate Pest Control Conf., March 4 and 5, 1964, Anaheim, Calif. p. 77-80. 1964. WR 115: 24

[Expt. Sta. Hawaiian Sugar Planters Assoc., Honolulu.] Rats (Rattus norvegicus, R. rattus, R. exlans) in Hawaii annually do more than a million dollars worth of damage to sugar cane. Damage consists of gnawing into the cane stalk and eating the sweet parenchyma. Control is accomplished through use of bait stations.

SCIURIDS

Jameson, E. W., Jr. PATTERNS OF HIBERNATION OF CAPTIVE CITELLUS LATERALIS AND EUTAMIAS SPECIOSUS. J. Mammal. 45(3): 455-460, 3 figs. Aug. 1964. WR 115: 24

[Univ. Calif., Davis.] Observations on the patterns of dormancy of Citellus lateralis and Eutamias speciosus. An effort was made "to determine what differences and similarities may exist in their dates of initial torpidity, durations between periodic arousals, percentage of time dormant and resumption of activity in the spring."

Jameson, E. W., Jr., and Rodney A. Mead. SEASONAL CHANGES IN BODY FAT, WATER AND BASIC WEIGHT IN CITELLUS LATERALIS, EUTAMIAS SPECIOSUS AND E. AMOENUS. J. Mammal. 45(3): 359-365, 3 figs. Aug. 1964. WR 115: 24

[Univ. Calif., Davis.] Abstract: Citellus lateralis in the Sierra Nevada of California has an annual change of total body fat, characterized by a threefold increase from August to September, just prior to hibernation. Eutamias speciosus and E. amoenus have less body fat than C. lateralis, and the predormancy increase occurs in October. These 2 species of Eutamias enter dormancy during October. Just prior to winter dormancy, there is a slight drop in basic weight (fat-free, water-free body weight) and body water.

Nadler, Charles F. [NEW TECHNIQUES FOR SYSTEMATICS.] THE APPLICATION OF CHROMOSOMAL ANALYSIS TO TAXONOMY OF SOME NORTH AMERICAN SCIURIDAE. Proc. 16th Intern. Congr. Zool. 4: 111-115. [1964]. WR 115: 24

[Northwestern Univ. Med. School, Chicago, Ill.] "The chromosomal characters described for Eutamias, Tamias and Spermophilus appear to fulfill the criterion of stability. Characters may also indicate relationships between categories and the use of chromosomal characters to determine such relationships among some Sciuridae has been discussed. Application of chromosomal characters to the taxonomy of other mammalian genera seems warranted."

SCIURIDS--Continued

Pulliainen, Erkki. ORAVAN SPIRAALIKIERTEISESTÄ MÄNNYN KUOREN REPIMISESTÄ SUOMESSA. [SPIRAL BARK-STRIPPING (RING-BARKING) OF PINE BY THE SQUIRREL (SCIURUS VULGARIS).] Suomen Riista 16: 56-68, 6 figs. 1963. [In Finnish with English summ.] WR 115: 25

Bark was stripped in spiral patterns from trunks of trees 20-40 years old and in patch patterns from trees 50-90 years old. Bark was removed from approximately 2800 trees/100 hectares. The squirrels do not eat the bark, but they may eat the sapwood.--From summ.

Rajala, Paavo, and Teppo Lampio. ORAVAN RAVINNOSTA MAASSAMME VUONNA 1945-1961. [THE FOOD OF THE SQUIRREL (SCIURUS VULGARIS) IN FINLAND IN 1945-1961.] Suomen Riista 16: 155-185, 17 figs. 1963. [In Finnish with English summ.] WR 115: 25

In fall and winter, pine and spruce seeds were the main items of food, but spruce buds were frequently used. Rate of use of given foods varied with availability of the various items used. In fall and winter, squirrels fed primarily in the upper parts of trees; in spring and summer they fed primarily on the ground. Greater annual variation in the food of the squirrel occurred during the fall and winter than during the spring and summer. In feeding tests with caged squirrels, the preference of seeds of conifers was as follows: (1) Pinus cembra, (2) Picea excelsa, (3) Larix sibirica, (4) Pinus silvestris, and (5) Abies sibirica.--From summ.

Sirjola, Esko. ORAVIEN RUOKAILUSTA LUMEN ALLA PELLILLA. [SQUIRRELS (SCIURUS VULGARIS) FEEDING BENEATH THE SNOW ON GRAINFIELDS.] Suomen Riista 16: 193-195, 2 figs. 1963. [In Finnish with English summ.] WR 115: 25

During periods of short food supplies squirrels dug tunnels beneath the snow in quest of grain. Tunnels were 10-20 meters long and as much as 150 meters from the nearest forest.--From summ.

BEAVER

Van Nostrand, F. C., and A. B. Stephenson. AGE DETERMINATION FOR BEAVERS BY TOOTH DEVELOPMENT. J. Wildl. Mgmt. 28(3): 430-434, 2 figs. July 1964. WR 115: 25

[Nova Scotia Dept. Lands & Forests, Kentville.] Abstract: Criteria for distinguishing year classes of beavers (Castor canadensis) were confirmed by 42 known-age specimens up to 10.5 years old from Ontario, Wisconsin, Newfoundland, and Nova Scotia. The criteria are the eruption, the degree of closure of basal openings, and annual cementum layers visible at the bases of mandibular molars when sectioned longitudinally. Beavers 0.5-1 year old are identified by the emergence of the permanent premolar, 1.5-2 years old by the open type of basal openings, 2.5-3 years old by the marked restriction of the basal openings and the presence of a single cementum layer on the bases of the molars. Beavers 3.5-4 years old are identified by the closure of the basal opening on the first molar, further restriction of openings on the bases of the other cheek teeth, and the presence of two cementum layers. Animals 4.5-5 years old and older have all basal openings closed and three or more cementum layers which have accumulated annually.

MUSKRAT AND NUTRIA

Karstad, Lars, and Joan Budd. PLASMACYTOMA WITH AMYLOIDOSIS IN A NUTRIA / A CASE REPORT. Canadian J. Comp. Med. & Vet. Sci. 28(7): 176-177, 4 figs. July 1964. WR 115: 25

Summary: A fatal neoplastic disease in a nutria is described. The salient features were proliferation of plasma cells and amyloidosis. A comparison is made with the lesions of viral plasmacytosis of mink and multiple myeloma of man.

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BEARS

Erickson, Albert W., John E. Nellor, and George A. Petrides. THE BLACK BEAR IN MICHIGAN. Mich. State Univ., Agr. Expt. Sta., Res. Bull. 4. 102 p., illus. 1964. WR 115: 26

[Alaska Dept. Fish & Game, Anchorage.] "This bulletin reports on three investigations dealing with aspects of the life history, ecology and management of the black bear in Michigan. The report is in three parts. Part I describes in detail breeding biology of the species as determined from histological studies of reproductive tracts, published literature, and field observations. Part II analyzes the population structure, movements, and mortality of bears as shown from capture and recovery of marked bears. Part III evaluates harvest statistics of black bears in Michigan as provided by questionnaire surveys of hunters."

Jonkel, Charles J. ESTIMATING WHOLE WEIGHTS OF BLACK BEARS FROM HOG-DRESSED WEIGHTS. J. Wildl. Mgmt. 28(3): 581. July 1964. WR 115: 26

[Univ. British Columbia, Vancouver.] Abstract: Whole weights and hog-dressed weights were recorded for eight black bears (Ursus americanus). Weight loss ranged from 11.6 to 20.7 percent of the whole weight, with an average loss of 15.9 percent.

Pulliainen, Erkki. KARHUN ESIINTYMISESTÄ JA ELINTAVOISTA SUOMESSA. [OCCURRENCE AND HABITS OF THE BEAR (URSUS ARCTOS) IN FINLAND.] Suomen Riista 16: 23-30, 6 figs. 1963. [In Finnish with English summ.] WR 115: 26

There has been little change in the distribution of the bear population in Finland within the twentieth century. The sex ratio of bears killed was 7 ♂♂ to 3 ♀♀. The preponderance of ♂♂ in the population may be partly a result of the earlier common practice of killing the ♀♀ and their cubs in winter dens. The Finnish bear population is regularly replenished by immigration of wandering ♂♂ from beyond the country's eastern border. Information is given on body weights and litter sizes.--From summ.

Taylor, Robert A., Jr. COLUMBIAN GROUND SQUIRREL AND CAMBIUM FOUND IN GRIZZLY BEAR STOMACHS TAKEN IN THE FALL. J. Mammal. 45(3): 476-477. Aug. 1964. WR 115: 26

[Natl. Park Serv., Port Angeles, Wash.] One grizzly bear (Ursus arctos horribilis) stomach contained a Columbian ground squirrel (Citellus columbianus); another stomach was full of cambium.

Troyer, Willard A., and Richard J. Hensel. BEHAVIOR OF FEMALE BROWN BEARS UNDER STRESS. J. Mammal. 45(3): 488-489. Aug. 1964. WR 115: 26

[U. S. Fish & Wildl. Serv., Kodiak, Alaska.] Mother brown bears (Ursus arctos middendorffi) deserted their trapped young in response to varying amounts of stress. As much as a half hour of shooting and shouting by the field crew was sometimes required to cause ♀♀ to leave their trapped young. No mother bear attacked the men when shooting and shouting were used.

RACCOON, RINGTAIL, COATI

Kaufmann, John H. [BEHAVIORAL ADAPTATIONS OF MAMMALS TO ENVIRONMENTS.] BEHAVIORAL ADAPTATIONS OF THE COATI (NASUA NARICA) IN THE PANAMA RAIN FOREST. Proc. 16th Intern. Congr. Zool. 3: 55-58. [1964]. WR 115: 26

[Univ. Calif., Berkeley.] Contains a wealth of information on the biology and behavior of the coati.

Montgomery, G. G. TOOTH ERUPTION IN PREWEANED RACCOONS. J. Wildl. Mgmt. 28(3): 582-584, 1 fig. July 1964. WR 115: 26

[Ill. Nat. Hist. Surv., Urbana.] Abstract: Ages of raccoons (Procyon lotor) less than 110 days old may be estimated by eruption of some deciduous and permanent teeth. Deciduous first, second, and third incisors erupt at 1 month; deciduous second, third, and fourth premolars at 1.5 months; deciduous first premolars and permanent first incisors at 2 months; permanent second incisors and first molars at 2.5 months; permanent third incisors at 3 months; and permanent canines at 3.5 months.

Welker, W. I., J. I. Johnson, Jr., and B. H. Pubols, Jr. [RECENT ADVANCES IN NEUROANATOMY.] SOME MORPHOLOGICAL AND PHYSIOLOGICAL CHARACTERISTICS OF THE SOMATIC SENSORY SYSTEM IN THE RACCOON. Proc. 16th Intern. Congr. Zool. 3: 246-250. [1964]. WR 115: 27
[Univ. Wis., Madison.]

MUSTELIDS

Blanchard, Harold. WEIGHT OF A LARGE FISHER. J. Mammal. 45(3): 487-488. Aug. 1964. WR 115: 27
[Greenville, Maine.] A male fisher (Martes pennanti) weighed 20 pounds and 2 ounces. This is believed to be a record weight for the species.

Burns, John J. MOVEMENTS OF A TAGGED WEASEL IN ALASKA. Murrelet 45(1): 10. Jan.-Apr. 1964. WR 115: 27
[Alaska Dept. Fish & Game, Nome.] A tagged ♂ weasel traveled at least 22 miles in 7 months.

Lockie, J. D. DISTRIBUTION AND FLUCTUATIONS OF THE PINE MARTEN, MARTES MARTES (L.) IN SCOTLAND. J. Animal Ecol. 33(2): 349-356, 3 figs. June 1964. WR 115: 27
[Nature Conservancy, 12 Hope Terrace, Edinburgh, Scotland.] Summary: Pine marten (Martes martes) were almost exterminated in Scotland at the beginning of the twentieth century. About 1926 they began to increase and continued to do so for 20 years during which time they spread far to the east and south. The factors which probably contributed to this extension of range include a relaxation of trapping during the 1914-18 War, a reduction in the intensity of game preservation, a more tolerant attitude by some landowners and their employees, and reafforestation. None, however, was decisive. After 20 years of increase and spread, marten began to show local fluctuations one of which in a Nature Reserve lasted 7 years. There appeared to be no corresponding fluctuation in the main prey species, the short-tailed vole (Microtus agrestis).

Mortimer, M. A. E. NOTES ON THE BIOLOGY AND BEHAVIOUR OF THE SPOTTED-NECKED OTTER (LUTRA MACULICOLLIS). Puku 1: 192-206, 2 figs. 1963. WR 115: 27

Newby, Fletcher E., and John J. McDougal. RANGE EXTENSION OF THE WOLVERINE IN MONTANA. J. Mammal. 45(3): 485-487, illus. Aug. 1964. WR 115: 27
[Mont. Fish & Game Dept., Helena.] Despite the fact that the wolverine (Gulo gulo) is not protected and is subject to predator control efforts in Mont., its range has been extended since 1953.

Pulliainen, Erkki. AHMAN ESIINTYMISESTÄ JA ELINTAVOISTA SUOMESSA. [OCCURRENCE AND HABITS OF THE WOLVERINE (GULO GULO) IN FINLAND.] Suomen Riista 16: 109-119, 9 figs. 1963. [In Finnish with English summ.] WR 115: 27
The wolverine population in Finland has been relatively stable in the last 50 years. Hunting effort is concentrated on mothers and their cubs during the breeding season, with the kill consisting of 58% ♀♀ and 42% ♂♂. The mean number of cubs in a litter is 2.6. In northern Finland, the chief winter food of the wolverine is reindeer (Rangifer tarandus).--From summ.

Sheldon, William G., and William G. Toll. FEEDING HABITS OF THE RIVER OTTER IN A RESERVOIR IN CENTRAL MASSACHUSETTS. J. Mammal. 45(3): 449-455. Aug. 1964. WR 115: 27
[Univ. Mass., Amherst.] Field observations and analysis of 517 scats indicated that river otters (Lutra canadensis) fed chiefly on warm water fish inhabiting coves. Various centrarchids were found in 54% of the scats, followed in frequency by yellow perch, white suckers, and golden shiner. There was no evidence of trout predation, despite the presence of high trout populations. Otters frequently fed on blueberries in late summer and on crayfish in all seasons.--From abstr.

MUSTELIDS--Continued

Tenovuo, Rauno. MINKKI SAARISTOALUEILLA. [THE MINK (MUSTELA VISON) IN THE ARCHIPELAGO AREAS.] Suomen Riista 16: 92-99, 3 figs. 1963. [In Finnish with English summ.] WR 115: 28

Arising from escaped ranch stock, mink have become established since 1950 in wide areas along the Finnish coast. Where abundant, minks are becoming the most serious predator of game. The mink seems to have no serious predator.--From summ.

DOGS, WOLVES, FOXES

Nowak, Eugeniusz, and Zygmunt Pielowski. DIE VERBREITUNG DES MARDERHUNDES IN POLEN IM ZUSAMMENHANG MIT SEINER EINBÜRGERUNG UND AUSBREITUNG IN EUROPA. [THE SPREAD OF THE RACCOON DOG IN POLAND CORRELATED TO ITS ACCLIMATIZATION AND EXTENSION OF RANGE IN EUROPE.] Acta Theriologica 9(7): 81-110, 7 figs. 30 May 1964. In German with Polish summ. WR 115: 28

[Ecological Inst., Nowy Świat 72, Warsaw, Poland.] "Nyctereutes procyonoides."

Pulliainen, Erkki. SUDEN RAVINNOSTA JA SAALISTUSTAVOISTA. [FOOD AND FEEDING HABITS OF THE WOLF (CANIS LUPUS) IN FINLAND.] Suomen Riista 16: 136-150, 2 figs. 1963. [In Finnish with English summ.] WR 115: 28

Of 1066 animals captured by wolves, 81% were ungulates. Foxes, hares, capercaillie and dogs were also captured. Domestic cattle were taken primarily in the summer and wild animals in the winter. Hunting habits of wolves are described.--From summ.

van der Merwe, N. J. DIE WILDEHOND (LYCAON PICTUS). [THE WILD DOG (LYCAON PICTUS).] Koedoe 2: 87-93. 1959. [In Afrikaans with English summ.] WR 115: 28

Describes hunting methods of the wild dog. Formerly fairly common in Kruger National Park, the wild dog was the target of control programs. They are currently controlled only in areas where they are a threat to antelope populations. These dogs have few natural enemies other than diseases.

CATS

Yoakum, Jim. OBSERVATIONS ON BOBCAT-WATER RELATIONSHIPS. J. Mammal. 45 (3): 477-479. Aug. 1964. WR 115: 28

[Bur. Land Mgmt., Reno, Nevada.] Two captive bobcats (Lynx rufus pallescens) readily entered water to capture or retrieve fish, to defecate, and presumably to cool themselves. The bobcats did not change their activities during light rains but sought shelter during heavy rains.

BIG GAME, GENERAL

Allen, L. D. C. THE LECHWE (KOBUS LECHE SMITHEMANI) OF THE BANGWEULU SWAMPS. Puku 1: 1-8, [2 figs.]. 1963. WR 115: 28

Adult ♂♂ weigh 140-200 lb. and ♀♀ weigh 20% less than ♂♂. Aerial surveys show little change in lechwe numbers during 1954-59. The chief lambing season is during May-Sept. Male:female ratio is 1:2. Lechwe predators are lions, leopards, and large birds. Poaching takes a heavy toll of the population.

Amaral, Anthony A. STRUGGLE IN OWENS VALLEY. Am. Forests 70(8): 26-27, 53-55, illus. Aug. 1964. WR 115: 28

A story of the conflict between commercial interests and conservationists on the preservation of the tule elk (Cervus nannodes). This elk came near to extinction in the 1880's with some indication that only one living pair remained. A herd is currently being maintained at 250-300 head.

Attwell, R. I. G. SURVEYING LUANGWA HIPPO. Puku 1: 29-49, [10 figs.]. 1963. WR 115: 29

Periodic surveys were made of the hippopotamus (Hippopotamus amphibius) population by floating down the Luangwa River in a boat. Except for a slight decrease in 1954, a continuous increase was indicated in the population during 1953-59. The hippopotamus is particularly vulnerable to hunting, and protection has been followed by a spectacular increase in the population. The population increase should be closely watched to guard against over-population and associated destruction of the habitat. The animals become emaciated and travel farther from the water where they are more susceptible to lion predation in times of food shortages.

Banfield, A. W. F. THE POST GLACIAL DISPERSAL OF AMERICAN CARIBOU. Proc. 16th Intern. Congr. Zool. 1: 206. [1964]. WR 115: 29

[Natl. Museum Canada, Ottawa, Ontario.]

Bergerud, Arthur T. A FIELD METHOD TO DETERMINE ANNUAL PARTURITION RATES FOR NEWFOUNDLAND CARIBOU. J. Wildl. Mgmt. 28(3): 477-480, 3 figs. July 1964. WR 115: 29

[Dept. Mines, Agr. & Resources, St. John's, Newfoundland.] Abstract: A technique is described in which 4,253 female caribou (Rangifer tarandus) were classified in the postcalving period as to parous of the current year (large udder) and nonparous of the current season (no visible udder). This technique was used to determine annual parturition rates in the period 1957-63.

Brander, T. HAVAINTOJA HIRVEN NENÄSAIVARTAJASTA SUOMESSA. [OBSERVATIONS ON CEPHENOMYIA ULRICHII IN MOOSE IN FINLAND.] Suomen Riista 16: 83-91, 3 figs. 1963. [In Finnish with English summ.] WR 115: 29

Nine larvae of the fly, Cephenomyia ulrichii, were found in the head of a moose which had been trapped in a barbed-wire fence. Seven larvae were in the throat and 2 in the lower part of the brain. Such larval infestations of the brain cause the animals to behave abnormally.--From summ.

Buechner, Helmut K. [BEHAVIORAL ADAPTATION OF MAMMALS TO ENVIRONMENTS.] TERRITORIALITY AS A BEHAVIORAL ADAPTATION TO ENVIRONMENT IN UGANDA KOB. Proc. 16th Intern. Congr. Zool. 3: 59-64. [1964]. WR 115: 29

[Wash. State Univ., Pullman.]

Daniel, M. J., and A. H. C. Christie. UNTERSUCHUNGEN ÜBER KRANKHEITEN DER GEMSE (RUPICAPRA RUPICAPRA L.) UND DES THARS (HEMITRAGUS JEMLAICUS SMITH) IN DEN SÜDALPEN VON NEUSEELAND. [INVESTIGATIONS INTO THE DISEASES OF THE CHAMOIS (RUPICAPRA RUPICAPRA L.) AND THE TAHR (HEMITRAGUS JEMLAICUS SMITH) IN THE SOUTHERN ALPS OF NEUSEELAND.] Schweizer Archiv Tierheilk. 105(7): 399-411. 1963. [From J. Mammal. 45(3), 1964. (In German).] WR 115: 29

Denney, Richard N. SPECIFIED ELK PERMITS--ARE WE READY FOR THEM? Colo. Outdoors 13(5): 26-35, 3 figs. Sept.-Oct. 1964. WR 115: 29

[Fort Collins, Colo.] "It may not be too long before game management in Colorado must become so intensive, because of static or even decreasing elk numbers and increased hunting pressure, that the actual number of antlered, as well as antlerless, animals must be limited or specified for each game management unit or area." Looking forward to this situation, the author recommends experimental use of specified permits in several areas. Related problems are discussed.

Eloff, F. C. OBSERVATIONS ON THE MIGRATION AND HABITS OF THE ANTELOPES OF THE KALAHARI GEMSBOK PARK. PART I. Koedoe 2: 1-29, 2 maps. 1959. WR 115: 29

[Univ. Pretoria, Pretoria, Transvaal, Union South Africa.] A discussion of the effect of various factors (chiefly rainfall), on reproduction and movement of the springbok, gemsbok, red hartebeest, blue hartebeest, eland, and steenbok. Antelope movements in Kalahari Gemsbok Park are not migrations in the accepted sense of the word, involving both departure and return, but they are food-seeking movements. The report contains information on food habits of the springbok and gemsbok and information on population density of all the above named antelopes.

Eloff, F. C. OBSERVATIONS ON THE MIGRATION AND HABITS OF THE ANTELOPES OF THE KALAHARI GEMSBOK PARK. PART II. Koedoe 2: 30-51, 1 pl. 1959. WR 115: 30
[Univ. Pretoria, Pretoria, Transvaal, Union South Africa.] Part II is a report of a second trip (in June 1958) to the Kalahari Gemsbok Park continuing the studies reported in WR 115: 29.

Eloff, F. C. OBSERVATIONS ON THE MIGRATION AND HABITS OF THE ANTELOPES OF THE KALAHARI GEMSBOK PARK. PART III. Koedoe 4: 18-30, 9 figs. 1961. WR 115: 30
Continuation of studies initiated in 1957.

Eloff, F. C. OBSERVATIONS ON THE MIGRATION AND HABITS OF THE ANTELOPES OF THE KALAHARI GEMSBOK PARK. PART IV. Koedoe 5: 128-136. 1962. WR 115: 30
Observations made during 1960.

Forrester, Donald J., and Clyde M. Senger. A SURVEY OF LUNGWORM INFECTION IN BIGHORN SHEEP OF MONTANA. J. Wildl. Mgmt. 28(3): 481-491, 2 figs. July 1964. WR 115: 30
[Univ. Calif., Davis.] Abstract: A survey of lungworm infection (Protostrongylus stilesi and P. rushi) in the Rocky Mountain bighorn sheep (Ovis canadensis) of Montana was conducted from 1958 to 1963. Ninety-one percent of 900 fecal samples collected from 10 bighorn herds in western Montana contained protostrongylid larvae. Ninety-three percent of 143 lungs examined were infected with P. stilesi and 40 percent with both P. stilesi and P. rushi. No lungs contained only P. rushi. Total lesion area of P. stilesi infections averaged 2,332 mm^2 and varied from 1 to 12,462 mm^2. Numbers of adult P. rushi averaged 10 per infected lung and varied from 1 to 162. Sheep appeared to become infected during their first year of life. There seemed to be some association between infections of P. stilesi and P. rushi in lungs and the numbers of first-stage protostrongylid larvae in the feces when samples were compared on a herd basis. Numbers of first-stage larvae in individual fecal droppings from the same samples, in samples collected daily from the same animal, and in samples collected monthly from a herd of bighorns varied considerably. Feces collected during the spring contained more larvae than samples collected at other times of the year. Yearly variation in intensity of infection appeared to be directly correlated to the amount of precipitation in the preceding year.

Grimwood, Ian. "OPERATION ORYX": THE SECOND STAGE. Oryx 7(5): 223-225. Aug. 1964. WR 115: 30
A report of steps recently taken to breed Arabian oryxes in captivity.

Kelsall, John P. THE DECLINE OF THE CARIBOU. Oryx 7(5): 240-246, illus. Aug. 1964. WR 115: 30
[Canadian Wildl. Serv., Box 180, Sackville, New Brunswick.] An account of the Canadian caribou (Rangifer tarandus arcticus) population before 1955 and of more recently initiated research on the species.

Koivisto, Ilkka. HIRVIKANTAMME RAKENTEESTA, LISÄÄNTYMISESTÄ JA VEROTUKSESTA. [COMPOSITION, PRODUCTIVITY AND KILL OF THE FINNISH MOOSE (ALCES ALCES) POPULATION.] Suomen Riista 16: 7-22, 5 figs. 1963. [In Finnish with English summ.] WR 115: 30
Based upon using questionnaire replies of hunters, the sex and age composition of the moose population was analyzed for the periods before and after the hunting seasons during 1960-1962. Increased harvesting of calves and reduced harvesting of calfless cows and "strong" bulls was recommended to increase production of the moose population.--From summ.

Robinette, W. L. WEIGHTS OF SOME OF THE LARGER MAMMALS OF NORTHERN RHODESIA. Puku 1: 207-215. 1963. WR 115: 30
[U. S. Fish & Wildl. Serv., Denver, Colo.] Body weights of 24 spp.

Robinette, W. L., and G. F. T. Child. NOTES ON BIOLOGY OF THE LECHWE (KOBUS LECHE). Puku 2: 84-117, 5 figs. + 3 pls. 1964. WR 115: 31

[U. S. Fish & Wildl. Serv., Denver, Colo.] An aerial census indicated 17,550 lechwe on the 158-square mile Lochinvar Ranch. Presumably as a result of selective hunting by Africans, the population contained 135 ♂♂ per 100 ♀♀. At mid-pregnancy time, 82.4 fetuses were found per 100 breeding-age ♀♀; at the lamb's average age of 3 months, there were 66.8 lambs per 100 breeding-age ♀♀. Peak breeding activity continued through Nov.-Feb., with lambs born during July-Sept. Some lambs may be born every month of the year. Breeding occurs in yearling ♀♀, but physical maturity is not reached until age 3-4 years. Physical maturity is attained by ♂♂ at age 4-5 years. Lambs at 1-2 days of age averaged 11.2 lbs.; adult ♂♂ averaged 227 lbs. and ♀♀ 174 lbs. Dressed carcass weights of adult ♂♂ was 55.6% of live weight and of ♀♀ 53.0%. Parasites and abnormalities are discussed. Because of a prolonged flood, natural mortality was considered to be excessive, with a loss of about 2,000 animals 3 or more months of age. The ungulate biomass of Lochinvar Ranch was estimated at 55,000 lbs. per square mile.

Wauer, Roland H. THE UNPREDICTABLE NELSON BIGHORN. Natl. Parks Magazine 38(203): 10-11, illus. Aug. 1964. WR 115: 31

Range available to the Nelson bighorn sheep (Ovis canadensis nelsoni) continues to decline, and saving this animal from extinction probably depends upon the willingness of humans to leave some wilderness areas undeveloped. Competition with burros is a second major cause for decline of the Nelson bighorn, and public opinion favors protection of the burro.

Wilson, V. J., and G. F. T. Child. NOTES ON BUSHBUCK (TRAGELAPHUS SCRIPTUS) FROM A TSETSE FLY CONTROL AREA IN NORTHERN RHODESIA. Puku 2: 118-128, [3] figs. 1964. WR 115: 31

[Dept. Vet. & Tsetse Control Serv., Northern Rhodesia.] Discusses aging of bushbuck by tooth eruption and replacement as well as habits, breeding season, population structure, habitat, and loss to predation.

DEER (Odocoileus)

Browning, Bruce M., and Earl M. Lauppe. A DEER STUDY IN A REDWOOD-DOUGLAS FIR FOREST TYPE. Calif. Fish & Game 50(3): 132-145, 5 figs. July 1964. WR 115: 31

[Calif. Dept. Fish & Game, Sacramento.] A study made during 1959-1963 of the relationship between black-tailed deer and the reproduction of the principal timber-producing trees in the coastal redwood-Douglas fir forests of Calif. Includes information on food habits, reproduction, age, condition, disease and parasites of the deer.--From summ.

Chamrad, Albert D., and Thadis W. Box. A POINT FRAME FOR SAMPLING RUMEN CONTENTS. J. Wildl. Mgmt. 28(3): 473-477, 2 figs. July 1964. WR 115: 31

[Welder Wildl. Foundation, Sinton, Texas.] Abstract: This paper describes the adaptation of the point analysis method, a standard vegetational sampling technique, to rumen analyses. The sampling device consisted of a frame containing five hatpins placed at a 45° angle through a wooden bar. The device was tested by two investigators on several combinations of artificially constructed populations of plant fragments and on actual rumen contents of white-tailed deer (Odocoileus virginianus). There were no significant differences between the ability of two investigators to estimate the volumetric composition of the samples, nor was there a difference in the ability of the individual investigator to repeat his estimates. The point analyzer gave reliable results provided (1) the rumen sample was adequately mixed and (2) there were no large items with unusual surface texture in the mixture.

Henriksson, Kurt, and Matti Helminen. TORAJYVÄMYRKYTYS VALKOHÄNTÄPEURAN KUOLEMANSYYNÄ. [A PROBABLE CASE OF ERGOTISM IN WHITE-TAILED DEER (ODOCOILEUS VIRGINIANUS).] Suomen Riista 16: 151-154, 2 figs. 1963. [In Finnish with English summ.] WR 115: 32

Ergotism is known to cause in domestic animals lesions of the type observed on an autopsied deer, and it is postulated that ergotism may have been the cause of deer death described.--From summ.

Horton, K. W. DEER PREFER JACK PINE. J. Forestry 62(7): 497-499, 2 figs. July 1964. WR 115: 32

[Dept. Forestry, Richmond Hill, Ontario, Canada.] Abstract: In an Ontario plantation jack pine consistently suffered much greater damage from deer browsing than other conifers in an experimentally designed layout. Browsing resulted in significant growth reduction and stem deformation in jack pine. White pine rated moderate, red pine low and white spruce nil in susceptibility. The incidence of browsing was appreciably lower on a north slope than on ridge top and south slope positions.

Moore, William H., Frank M. Johnson, John Oberheu, and Donald D. Strode. FORAGE FOR DEER. Wildl. in N. C. 28(7): 14-15, illus. July 1964. WR 115: 32

[U. S. Forest Serv., Asheville, N. C.] Clipped samples of forage were oven-dried and weighed, and differences between protected and unprotected plots were recorded as the amount of forage used since the last clipping. Consumption of clovers was heaviest during the spring and summer; consumption of grasses was heaviest during the late fall and winter. Pounds utilized per month per acre were as follows: orchard grass, 127; red clover, 105; Oklahoma brome, 93; shade fescue, 84; ladino clover, 76; tall oatgrass, 75; Kentucky fescue, 45; Kentucky bluegrass, 15.

Patton, David R., and Burd S. McGinnes. DEER BROWSE RELATIVE TO AGE AND INTENSITY OF TIMBER HARVEST. J. Wildl. Mgmt. 28(3): 458-463. July 1964. WR 115: 32

[U. S. Forest Serv., Santa Fe, N. Mex.] The response of deer browse in a forest stand, as influenced by different cutting intensities and the age of cut was studied. Browse was clipped on 4 uncut and 45 cut areas 0.5 acre in size in a Mixed Oak-Pine type. The cuts were made from 1 to 4 years prior to this study and had from 22 percent to 78 percent of the basal area removed. A conversion factor was computed to convert basal area at 8 inches to basal area at dbh. Each 0.5-acre unit had four clip plots. The average of the four plots was converted to pounds per acre for the 49 units. Data from the cut units were subjected to a regression analysis using the number of years after cutting and the percent of basal area removed as variables. An R^2 of 0.466 was accepted as significant, as was the total regression. The final estimating equation was $\log \hat{y} = 1.011106 + 0.068343x_1 + 0.013834x_2$. Using this equation, a table was prepared for predicting browse from 1 to 4 years after cutting with 30 percent to 80 percent of the basal area removed.--From abstr.

Russo, John P. THE KAIBAB NORTH DEER HERD--ITS HISTORY, PROBLEMS AND MANAGEMENT / A RESEARCH AND MANAGEMENT STUDY. Ariz. Game & Fish Dept., Wildl. Bull. no. 7. vi + 195 p., 43 figs. July 1964. WR 115: 32

Major topics of discussion are: history of the area and its deer from 1850 through 1963, study methods, population dynamics, parasites, disease, malnutrition, weights, effect of hunting upon herd composition, predation, and habitat improvement.

Short, Henry L. POSTNATAL STOMACH DEVELOPMENT OF WHITE-TAILED DEER. J. Wildl. Mgmt. 28(3): 445-458, 5 figs. July 1964. WR 115: 33

[Colo. Coop. Wildl. Res. Unit, Colo. State Univ., Fort Collins.] Abstract: Fifteen white-tailed deer (Odocoileus virginianus), newborn, 0.5, 1, 2, 3, and 4 months of age, and adult, were studied. The anatomy of the ruminant stomach is reviewed. Measurements recorded in this study were selected anatomical indices, stomach tissue weights, analysis of stomach contents, and volume measurements of stomach compartments. At birth, the deer rumen is diminutive and the abomasum large and functional. The rumen and reticulum at 2 months of age have greater volume and weight dimensions than do the omasum and abomasum, and by 4 months of age stomach proportions are similar to those of adult deer. The stomach of deer is relatively smaller than is that of domestic cows or sheep, suggesting differences in food habits and inequalities in the digestion of fibrous vegetation. Differences also exist between deer and sheep in the relative sizes of the four stomach compartments. White-tailed deer are functional ruminants by 0.5 month, essentially dependent on ruminant digestive processes by 5 weeks, and nutritionally self-sufficient by 4 months.

Smith, Arthur D. DEFECATION RATES OF MULE DEER. J. Wildl. Mgmt. 28(3): 435-444, 2 figs. July 1964. WR 115: 33

[Utah State Univ., Logan.] Abstract: Pellet-group counts were made with penned mule deer (Odocoileus hemionus) over a period of 12 years. The defecation rates observed were somewhat higher than those commonly assumed, being from 13 to 14 groups per day. Weights of pellet groups, the number of pellets per group, and pellet size were too variable to provide any assistance in identifying fecal deposits of individual animals. Foraging juvenile animals exhibited higher rates of defecation than did mature animals; therefore, age classifications are important to accurate censuses. The rates of yearlings seldom differed significantly from older animals. The level of forage intake affected the rate of defecation. Rates must be expressed in terms of the weight of the animal; otherwise, juvenile animals with low forage consumption and high rates mask the effect. Also, the kind of forage eaten affected the number of defecations. Barring mildly laxative effects of concentrates and possibly succulent forage, coarse woody material usually produced higher defecation rates than the same amounts of more nutritious food. Data obtained from field counts with known populations of deer gave generally lower values than were found in the pens, but failure to locate pellets may have been an important factor. The validity of counts in dense vegetation in the summer is highly questionable. Statistical analyses of counts made on winter ranges indicate more than 200 plots of 100 square feet each in size may be required for reasonable accuracy with high deer populations. The 100-square-foot plot size, though a convenient area for counting, is possibly too small a sample. Four such plots in a cluster seem to be a better basis for the individual observation. Further modification of the plot to 108.9 square feet so that each observation would represent 0.01 of an acre would facilitate computation.

Stewart, Sheila F., H. A. Nordan, A. J. Wood, and I. McT. Cowan. CHANGES IN THE PLASMA LIPIDS IN THE BLACK-TAILED DEER THROUGHOUT A YEAR. Proc. 16th Intern. Congr. Zool. 2: 46. [1964]. WR 115: 33

[Univ. British Columbia, Vancouver, British Columbia, Canada.] Body weights of 6 captive black-tailed deer (Odocoileus hemionus columbianus) steadily increased from late spring until Oct.; then a marked decrease occurred in body weights and food intake. At the point of maximum gain in body weight there was a rise in plasma cholesterol. In ♀♀ the plasma fat levels first increased, then decreased when the greatest weight loss ensued. The ♂♂ showed a reduced plasma level throughout the period of weight decline.

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Thomas, Jack Ward, James G. Teer, and E. A. Walker. MOBILITY AND HOME RANGE OF WHITE-TAILED DEER ON THE EDWARDS PLATEAU IN TEXAS. J. Wildl. Mgmt. 28(3): 463-472, 2 figs. July 1964. WR 115: 34

[Texas Game & Fish Comm., Llano.] Abstract: Two hundred forty-one deer (Odocoileus virginianus) were trapped and ear-tagged over a 3-year period. Recoveries of these animals were from three sources: deer retrapped, deer shot by hunters, and deer found dead. Four traplines, involving 55 trap locations, were located astride the transition zone between limestone and granitic soils. Recoveries were obtained on 58.9 percent of the deer over a 6-year period. Of the three types of recoveries, those from deer harvested by hunters were thought to yield the most reliable statistics. Figures derived from other recoveries were subject to such bias that they are presented only as supporting evidence. Only 3 of 186 recoveries were from distances greater than 1.5 miles from the point of original marking; the indicated average movement was 717 yards from the point of marking. There appeared to be no relation between the amount of time elapsed from marking to recovery and distances moved. Male deer had a somewhat greater average movement than females.

Wingard, Robert G. DEER MANAGEMENT COMES TO TOWN. Pa. Game News 35(6): 8-10, illus. June 1964. WR 115: 34

[Pa. State Univ., University Park.] Information on deer management is being given to the public through use of local discussion groups conducted by the Cooperative Extension Service and the Pa. Game Commission. Local people help plan the programs which include short formal presentations by an extension service specialist and a Pa. game commission research biologist. A significant part of each program is used in discussion. Total attendance at these programs has exceeded 6,000.

MAMMALS--MARINE

Busnel, René-Guy, Albin Dziedzic, and Sören Andersen. SUR CERTAINES CARACTERISTIQUES DES SIGNAUX ACOUSTIQUES DU MARSOUIN PHOCOENA PHOCOENA L. [ON CERTAIN CHARACTERISTICS OF ACOUSTIC SIGNALS OF THE HARBOR PORPOISE PHOCOENA PHOCOENA L.] Comptes Rendus Acad. Sci. Paris 257: 2545-2548. 21 Oct. 1963. [From J. Mammal. 45(3), 1964. (In French).] WR 115: 34

Kubota, Kinziro. MORPHOLOGICAL OBSERVATIONS OF THE DECIDUOUS DENTITION IN THE FUR SEAL (CALLORHINUS URSINUS). Bull. Tokyo Med. & Dental Univ. 10(1): 75-87. 1963. [From J. Mammal. 45(3), 1964.] WR 115: 34

Kubota, Kinziro, and Koji Matsumoto. ON THE DECIDUOUS TEETH SHED INTO THE AMNION OF THE FUR SEAL EMBRYO. Bull. Tokyo Med. & Dental Univ. 10(1): 89-93. 1963. [From J. Mammal. 45(3), 1964.] WR 115: 34

Kubota, Kinziro, Koji Matsumoto, Fukuso Nagasaki, and Morio Tsuboi. AN AGE DETERMINATION OF THE HIGHLY AGED FUR SEAL BY MEANS OF PHOTOGRAPHY OF THE MAXILLARY CANINE. Bull. Tokyo Med. & Dental Univ. 10(1): 61-73. 1963. [From J. Mammal. 45(3), 1964.] WR 115: 34

Omura, Hideo. AN IMPROVED METHOD FOR COLLECTION OF EAR PLUGS FROM BALEEN WHALES. Norsk Hvalfangst-Tidende (Norwegian Whaling Gazette) 52(10): 279-282. Oct. 1963. [From J. Mammal. 45(3), 1964.] WR 115: 34

Roest, Aryan I. A RIBBON SEAL FROM CALIFORNIA. J. Mammal. 45(3): 416-420, 1 fig. Aug. 1964. WR 115: 34

[Calif. State Polytech. Coll., San Luis Obispo.] The first record of Histriophoca fasciata from the area south of the Arctic Circle.

MAMMALS--MARINE--Continued

Rothschild, Brian J. OBSERVATIONS ON DOLPHINS (CORYPHAENA SPP.) IN THE CENTRAL PACIFIC OCEAN. Copeia 1964(2): 445-447, 1 fig. June 1964. WR 115: 35
[Bureau Commercial Fisheries, Honolulu, Hawaii.] With observations on food and feeding habits.

Scheffer, Victor B. DEEP DIVING OF ELEPHANT SEALS. Murrelet 45(1): 9. Jan.-Apr. 1964. WR 115: 35
[Marine Mammal Biol. Lab., Seattle, Wash.] Three seals were probably "hooked on the sea floor in about 100 fathoms of water" by fishermen fishing for black cod.

MAMMALS--OTHER GROUPS

Caughley, Graeme. SOCIAL ORGANIZATION AND DAILY ACTIVITY OF THE RED KANGAROO AND THE GREY KANGAROO. J. Mammal. 45(3): 429-436, 5 figs. Aug. 1964. WR 115: 35
[Forest & Range Expt. Sta., Rangiora, New Zealand.] Sociability and daily activity of the red kangaroo (Macropus rufus) and the grey kangaroo (M. canguru) are discussed.

Guggisberg, C. A. W. AN APPRECIATION OF AFRICAN RHINOCEROSES. Animal Kingdom 67(4): 114-121, illus. July-Aug. 1964. WR 115: 35
Contains some information on behavior of the rhinoceros. With the fabulous prices paid for rhinoceros horns and the ease with which rhinoceroses can be shot, this animal must be given fuller protection if it is to be preserved from extinction.

Hanney, Peter. THE HARSH-FURRED RAT IN NYASALAND. J. Mammal. 45(3): 345-358, 2 figs. Aug. 1964. WR 115: 35
[Nyasaland Museum, Blantyre, Nyasaland.] The following are discussed: distribution, habitat, daily activity periods, density, movement, population dynamics, reproduction, color change, diet, parasites and diseases of the harsh-furred rat (Lophuromys flavopunctatus) in Nyasaland.

Hughes, Alun R. SOME ANCIENT AND RECENT OBSERVATIONS ON HYAENAS. Koedoe 1 105-114, 1 fig. 1958. WR 115: 35
Review of available information on "what and how a hyaena eats, their reputed cannibalism, the similarity in the habits of brown hyaenas to other hyaenas in respect of failing to accumulate bones and the rôle of porcupines versus hyaenas in collecting bones and other hard objects."

Piekarz, Ryszard. GRÖSSE DES MAGENDARMKANALS UND GEWICHT DER INNEREN ORGANE BEIM DAMHIRSCH. [THE SIZE OF THE ALIMENTARY CANAL AND WEIGHT OF INTERNAL ORGANS OF DAMA DAMA.] Acta Theriologica 9(2): 25-29. 30 May 1964. In German with Polish summ. WR 115: 35
[Zool. Garden, Warsaw, Poland.]

Zumpt, F. PARASITES OF THE WHITE AND THE BLACK RHINOCEROSES. Lammergeyer 3 (1): 59-70, 12 figs. Feb. 1964. WR 115: 35
[S. African Inst. Med. Res., Johannesburg, Union S. Africa.] A discussion of the parasites of the 2 spp. of rhinoceros (Ceratotherium simum and Diceros bicornis) including 3 spp. of flies, 24 spp. of ticks and 32 of worms.

BIRDS--GENERAL

McClure, H. Elliott. AVIAN BIONOMICS IN MALAYA: 1. THE AVIFAUNA ABOVE 5000 FEET ALTITUDE AT MOUNT BRINCHANG, PAHANG. Bird-Banding 35(3): 141-183, 5 figs. July 1964. WR 115: 35
[Migratory Animal Pathol. Surv., Box 6119, APO 323, San Francisco, Calif.] More than three-fourths of this paper consists of tables giving data on the following: net locations and success, bird collisions at radio towers, bird weights and measurements, evidence of breeding, and survival. Of the 104 spp. noted, 1413 individuals of 65 spp. were netted and banded.

Mitchell, K. D. G. FURTHER OBSERVATIONS OF BIRDS FROM AIRCRAFT. British Birds 57(8): 315-324. Aug. 1964. WR 115: 36
During the period 1949-1963 the author traveled 1,750,000 miles in aircraft and observed 217 birds 500 feet or more above ground level. The present paper is an analysis of the 86 observations made during 1957-1963. Of the 86 observations, 72% were made below 2,000 feet, 20% between 2,000 and 4,500 feet above ground level. No birds were seen more than 12,000 feet above ground level. Lapwings (Vanellus vanellus), herring gulls (Larus argentatus), and swifts (Apus apus) were the species most often seen. Several observations were associated with insects being carried aloft by heat convection.

Norris, A. Y. OBSERVATIONS ON SOME BIRDS OF THE TOOLOOM SCRUB, NORTHERN N.S.W. Emu 63(5): 404-412. June 1964. WR 115: 36
Contains observations on ecology and behavior of birds in a rain forest.

BIRDS--MORPHOLOGY, PHYSIOLOGY, BEHAVIOR, MIGRATION

Birukow, Georg. [ECOLOGICAL AND EVOLUTIONARY ASPECTS OF "BIOLOGICAL CLOCKS".] TIME-COMPENSATED SUN-ORIENTATION IN ANIMALS. Proc. 16th Intern. Congr. Zool. 4: 346-350. [1964]. WR 115: 36
[Univ. Göttingen, Göttingen, Germany.]

Cobb, Stanley. [RECENT ADVANCES IN NEUROANATOMY.] SOME COMPARATIVE MEASUREMENTS OF THE OPTIC LOBE IN BIRDS. Proc. 16th Intern. Congr. Zool. 3: 233. [1964]. WR 115: 36
[Harvard Univ., Cambridge, Mass.]

Erskine, Anthony J. BIRD MIGRATION DURING APRIL IN SOUTHERN BRITISH COLUMBIA. Murrelet 45(2): 14-22, 2 figs. May-Aug. 1964. WR 115: 36
[Canadian Wildl. Serv., Sackville, New Brunswick, Canada.] Many northward migrating birds seemingly fly over the Rocky Mountains.

Genelly, R. E. COMMON EGRET PREYS ON MEADOWLARK. Condor 66(3): 247. May 1964. WR 115: 36
[Humboldt State Coll., Arcata, Calif.]

Hailman, Jack P. SOCIAL ACCELERATION OF FOOD-DISCOVERY IN GULL CHICKS. Proc. 16th Intern. Congr. Zool. 2: 21. [1964]. WR 115: 36
[Duke Univ., Durham, N. C.] The gull chick has an inborn tendency to peck at moving, red or contrastingly colored objects and thus pecks at the parent bird's bill. The parent bird regurgitates food on the ground and holds the food in its beak; thus pecking soon leads to food discovery. As chicks have white-tipped dark bills, the pecking movements of a bill of one chick stimulates pecking movements by associated inexperienced chicks.

Kear, Janet. CONGENITAL MALFORMATION IN BIRDS BRED AT SLIMBRIDGE. 15th Ann. Rept. Wildfowl Trust 1962-63, p. 99. 1964. WR 115: 36
Ten of 1767 birds that failed to hatch at Slimbridge in 1961 had congenital deformations. In 1962 none of 934, and in 1963 none of 2459 were thus afflicted.

Kilham, Lawrence. INTERSPECIFIC RELATIONS OF CROWS AND RED-SHOULDERED HAWKS IN MOBBING BEHAVIOR. Condor 66(3): 247-248. May 1964. WR 115: 36
[Lyme, N. H.]

Kruijt, J. P. [THE ONTOGENY OF BASIC RESPONSE PATTERNS.] ONTOGENY OF SOCIAL BEHAVIOR PATTERNS IN JUNGLE FOWL. Proc. 16th Intern. Congr. Zool. 4: 367-370. [1964]. WR 115: 36
[Zool. Lab., Groningen, Netherlands.]

Lasiewski, R. C., S. H. Hubbard, and W. R. Moberly. ENERGETIC RELATIONSHIPS OF A VERY SMALL PASSERINE BIRD. Condor 66(3): 212-220, 5 figs. May 1964. WR 115: 37

[Univ. Calif., Los Angeles.] The following are considered: standard metabolic rate, oxygen use versus ambient temperature, evaporative water loss, dissipation of metabolic heat, heart beat rate and breathing rate.

LeFebvre, Eugene A. THE USE OF D_2O^{18} FOR MEASURING ENERGY METABOLISM IN COLUMBA LIVIA AT REST AND IN FLIGHT. Auk 81(3): 403-416, 1 fig. July 1964. WR 115: 37

[Univ. Minn., Minneapolis.] The D_2O^{18} method for determination of CO_2 production and other components of the energy balance (food intake, water turnover, and gaseous exchange) had been shown to be applicable to laboratory mammals by other workers. The method was extended in this investigation to pigeons for the purpose of validating this approach for metabolism studies in birds. The validation studies performed on ordinary common pigeons and racing pigeons gave a mean calculated CO_2 production which is 8 per cent $\pm$ 2 per cent (S.E.) that of the observed CO_2 production obtained by collection in concentrated KOH solution and analyzed by the Van Slyke manometric method. For the energy expenditure of flight, a mean caloric requirement of 22 $\pm$ 2 (S.E.) Kcal/hr was obtained for eight racing pigeons averaging 384 g in weight and flying a distance of 300 miles.--From summ.

Matthews, G. V. T. [ANIMAL NAVIGATION.] A REVIEW OF ORIENTATION STUDIES AND THEIR RELEVANCE TO THE PROBLEMS OF BIRD NAVIGATION. Proc. 16th Intern. Congr. Zool. 4: 377-379. [1964]. WR 115: 37

[Wildfowl Trust, Slimbridge, Gloucestershire, England.]

McCaskie, R. Guy, and Richard C. Banks. OCCURRENCE AND MIGRATION OF CERTAIN BIRDS IN SOUTHWESTERN CALIFORNIA. Auk 81(3): 353-361, 1 fig. July 1964. WR 115: 37

[Tahoe City, Calif.] Observations on less common birds in the area are reported based on 40 bird counts in 56 days during the 1962 fall migration.

Millar, John B. CROW AND MALLARD NESTING IN CLOSE PROXIMITY. Blue Jay 22 (3): 110, illus. Sept. 1964. WR 115: 37

[Canadian Wildl. Serv., Saskatoon, Saskatchewan, Canada.] Nests of a crow and a mallard were less than 15 feet apart with the incubating birds in full view of each other. The mallard ducklings hatched and left the nest while the crows were still incubating.

Nakamura, T. DISTRIBUTION OF THE BLACK-FOOTED ALBATROSS (DIOMEDEA NIGRIPES) IN THE NORTH PACIFIC OCEAN. Misc. Repts. Yamashina's Inst. Ornithol. & Zool. 3: 239-246. 1963. [From Auk 81(3), 1964. In English with Japanese summ.] WR 115: 37

Oatley, T. B. THE PROBING OF ALOE FLOWERS BY BIRDS. Lammergeyer 3(1): 2-8. Feb. 1964. WR 115: 37

Forty-three spp. of 21 families were observed probing blossoms of aloe (Aloe marlothii). Insects occur in the aloe blossoms, but it was thought that the birds were seeking the watery nectar as food or drink or both.--From summ.

Parkes, Kenneth C., and George A. Clark, Jr. ADDITIONAL RECORDS OF AVIAN EGG TEETH. Wilson Bull. 76(2): 147-154. June 1964. WR 115: 37

[Carnegie Museum, Pittsburgh, Pa.] The large number of families and genera reported having egg teeth makes it seem likely that this structure occurs in the embryos of all birds. This seemingly universal presence suggests the egg tooth was present in the common ancestor of living birds.

Pearson, Oliver P. METABOLISM AND HEAT LOSS DURING FLIGHT IN PIGEONS. Condor 66(3): 182-185, 1 fig. May 1964. WR 115: 38

[Museum Vertebrate Zool., Berkeley, Calif.] Summary: Pigeons with sealed cloacas lost weight during flight at a rate of 3.0 gm. per hour or 11.87 gm./hr./kg. of initial body weight. This indicates a metabolic rate during flight of less than 23 times that of resting pigeons. Most of the heat generated during flight was dissipated through convection and radiation; not more than 7.0 kcal./hr./kg. were dissipated through evaporative cooling. Body temperatures rose about 2°C. during flight. This rise represents storage of an amount of heat produced during only a few minutes of flight.

Penney, R. L., and J. T. Emlen. SUN ORIENTATION BY THE ADELIE PENGUIN (PYGOSCELIS ADELIAE). Proc. 16th Intern. Congr. Zool. 2: 20. [1964]. WR 115: 38

[Univ. Wis., Madison.] Adelie penguins were transported from coastal rookeries to release points on featureless plateaus in the interior of the Antarctic. All performances suggested the birds have a navigation mechanism which uses the sun as the primary orientation cue plus a biological clock to compensate for changes in sun azimuth.

Perdeck, A. C. DOES NAVIGATION WITHOUT CELESTIAL CLUES EXIST IN ROBINS? Ardea 51: 91-104. 1963. [From Bird-Banding 35(3), 1964.] WR 115: 38

Perkins, Richard. THE ELECTROPHORETIC PATTERNS OF THE SERUM PROTEINS AND HEMOGLOBINS OF THE GENUS LARUS. Murrelet 45(2): 26-28. May-Aug. 1964. WR 115: 38

[Tacoma, Wash.] Distinct electrophoretic patterns of serum proteins and hemoglobins could not be found in any of 7 spp. of gulls.

Petrov, P. [GROWTH AND DEVELOPMENT OF THE MAGPIE DURING THE NESTLING PERIOD.] Bulgarska Akad. Nauk. Izvest. Zool. Inst. 15: 69-75, 4 figs. 1964. In Bulgarian with summaries in Russian and German. WR 115: 38

Robinson, Gerald G., and Dwain W. Warner. SOME EFFECTS OF PROLACTIN ON REPRODUCTIVE BEHAVIOR IN THE BROWN-HEADED COWBIRD (MOLOTHRUS ATER). Auk 81 (3): 315-325, 5 figs. July 1964. WR 115: 38

[Univ. South Fla., Tampa.] Some young ♀♀ but not cowbirds in breeding condition responded to prolactin injections with incubation behavior or nestling care. Prolactin injections resulted in a reduction in song displays of ♂♂.

Savage, Christopher. LAKE REZAIYEH: A SPECIALISED SUMMER HABITAT FOR SHELDUCK AND FLAMINGOS. 15th Ann. Rept. Wildfowl Trust 1962-63. p. 108-113, 3 figs. 1964. WR 115: 38

The salt content of Lake Rezaiyeh varies from 8% to 28% during a year. Nevertheless, common shelducks (Tadorna tadorna) nest at the lake. Ruddy shelducks (Tadorna ferruginea) and greater flamingos (Phoenicopterus ruber roseus) are summer visitors. It appeared that brine shrimp (Artemia) and their eggs were the chief sources of food for the shelducks and that brine shrimp and an algal organism (Enteromorpha intestinalis) were the chief foods of the flamingo. The shelducks and flamingos were found to have large lachrymal glands capable of excreting chlorides at high concentrations.

Selander, Robert K. BEHAVIOR OF CAPTIVE SOUTH AMERICAN COWBIRDS. Auk 81 (3): 394-402, 2 figs. July 1964. WR 115: 38

[Univ. Texas, Austin.] Deals with interspecific preening invitation displays, bowing ruff-out display and song.

Short, Lester L., Jr. EXTRA HELPERS FEEDING YOUNG OF BLUE-WINGED AND GOLDEN-WINGED WARBLERS. Auk 81(3): 428-430. July 1964. WR 115: 38

[U. S. Natl. Museum, Washington, D. C.] Cases are reported of blue-winged warblers and a blue-winged x golden-winged warbler hybrid feeding young of these species otherwise attended by two birds.

Wallraff, H. G., and J. Kiepenheuer. MIGRACIÓN Y ORIENTACIÓN EN AVES: OBSERVACIONES EN OTOÑO EN EL SUR-OESTE DE EUROPA. [MIGRATION AND ORIENTATION: AUTUMN OBSERVATIONS IN SOUTHWEST EUROPE.] Ardeola 8: 19-40. 1963. [From Bird-Banding 35(3), 1964. (In Spanish) with English summ.] WR 115: 39

Ward, P. THE FAT RESERVES OF YELLOW WAGTAILS MOTACILLA FLAVA WINTERING IN SOUTHWEST NIGERIA. Ibis 106(3): 370-375, 2 figs. July 1964. WR 115: 39
[Univ. Singapore, Singapore 10, Malaya.] Fat content was about 5% of body weight during Oct.-Mar. and increased during Apr. to 20-30%. The maximum fat content recorded was 30.6% of body weight.

Wolfson, Albert, and Shayna J. Johnson. HYPOTHALAMO-HYPOPHYSEAL AND GONADAL RESPONSE IN RELATION TO THE DAILY DARK PERIOD DURING THE PREPARATORY PHASE OF THE AVIAN REPRODUCTIVE CYCLE. Proc. 16th Intern. Congr. Zool. 2: 152. [1964.] WR 115: 39
[Northwestern Univ., Evanston, Ill.]

BIRDS--MANUALS, FAUNAS, COMMUNITIES

Bartie, W. A LIST OF BIRDS IN THE KLERKSDORP AREA. South African Avifauna Ser. Percy Fitzpatrick Inst. African Ornithol. no. 10. 9 p. 1963. 20¢. WR 115: 39
Listing of 63 spp.

Benson, C. W. SOME INTRA-AFRICAN MIGRATORY BIRDS. Puku 2: 53-66. 1964. WR 115: 39
With information indicating migratory movements of several species of South African birds.

Brown, Jerram L. THE EVOLUTION OF DIVERSITY IN AVIAN TERRITORIAL SYSTEMS. Wilson Bull. 76(2): 160-169, 1 fig. June 1964. WR 115: 39
[Univ. Rochester, Rochester, N. Y.] A general theory of territoriality is proposed which depends upon the influence of two primary variables, competition and economic defendability, and on the adaptive value of aggressiveness under various conditions of these variables. It is suggested that in species with large territories used for both feeding and nesting, territoriality might, under certain conditions, be maintained or selected for in a population merely through the exclusion of less aggressive individuals from the opportunity to breed in a suitable habitat. Such exclusion would, however, be limited by counter-selection pressures when aggressiveness became too detrimental to reproduction.--From summ.

Clapham, C. S. THE BIRDS OF THE DAHLAC ARCHIPELAGO. Ibis 106(3): 376-388, 1 fig. July 1964. WR 115: 39
[Keble Coll., Oxford, England.] An annotated list of 33 spp. with comments on population status, habits, habitat, food and liability to predation.

Davison, E. CHECK LIST OF BIRDS OF WANKIE NATIONAL PARK. South African Avifauna Ser. Percy Fitzpatrick Inst. African Ornithol. no. 13. 50 p. 1963. 75¢. WR 115: 39

De Villiers, J. S. A REPORT ON THE BIRD LIFE OF THE KALAHARI GEMSBOK NATIONAL PARK. Koedoe 1: 143-161. 1958. WR 115: 39
An annotated list of 122 spp. is given followed by sections in which the influence of water and trees on bird distribution is discussed. A striking feature of the Park's bird population is the presence of 25 spp. of predators.

Donchev, Stefan. [ON THE DISTRIBUTION OF SOME NEW AND RARE BIRDS OF BULGARIA.] Bulgarska Akad. Nauk. Izvest. Zool. Inst. 16: 23-28. 1964. In Bulgarian with Russian and German summ. WR 115: 39

Fennell, Chester M., and Ben F. King. NEW OCCURRENCES AND RECENT DISTRIBUTIONAL RECORDS OF KOREAN BIRDS. Condor 66(3): 239-246. May 1964. WR 115: 40

Contains new information on the status of 36 spp. based on 10 years of study and collecting.

Grant, P. R., and I. McT. Cowan. A REVIEW OF THE AVIFAUNA OF THE TRES MARIAS ISLANDS, NAYARIT, MEXICO. Condor 66(3): 221-228. May 1964. WR 115: 40

[Univ. British Columbia, Vancouver, Canada.] Summary: The Check-list of the birds of the Tres Marías Islands has been revised. Thirty-one new records have been added, of which 16 have been substantiated with specimens. Nyctanassa violacea, Coccyzus minor and Camptostoma imberbe have been added to the list of breeding birds and two more species are suspected of breeding; breeding activity of the majority of summer-resident terrestrial birds has been observed. The numbers of species of winter-resident and migrant terrestrial birds and the number of summer-resident terrestrial birds are approximately equal. In general, male transients occur on the islands in greater numbers than females and they appear earlier in spring migration. Nothing is known of the post-breeding movements of the resident terrestrial species and only one autumn migrant has been recorded.

Johnston, Richard F. THE BREEDING BIRDS OF KANSAS. Univ. Kans. Publ., Museum Nat. Hist. 12(14): 577-655, 10 figs. 18 May 1964. WR 115: 40

The distribution of Kans. birds and some attributes of the breeding seasons are discussed in sections preceding the species accounts. Information is included on the status, habitat, geographic distribution, seasonal occurrence, schedule of egg-laying, number of eggs laid, and sites of nests of the 176 spp. of birds known to breed in Kans.

Kent, A. K. THE BREEDING HABITATS OF THE REED BUNTING AND YELLOWHAMMER IN NOTTINGHAMSHIRE. Bird Study 11(2): 123-127. June 1964. WR 115: 40

[Univ. Nottingham, Nottingham, England.] A questionnaire survey indicated that the breeding range of the reed bunting (Emberiza schoeniclus) has been extended in recent years into drier habitat occupied by the yellowhammer (Emberiza citrinella).

Klopfer, Peter H. HABITAT SELECTION IN BIRDS. Proc. 16th Intern. Congr. Zool. 2: 19. [1964.] WR 115: 40

[Duke Univ., Durham, N. C.] "Tropical birds show increased stereotypy (smaller niches) due to greater stability of tropical as opposed to temperate zone habitats. This, in turn, permits an enhancement of the diversity of tropical faunae."

Little, Jeanne de V. A LIST OF THE BIRDS OF THE CAROLINA DISTRICT, TRANSVAAL. South African Avifauna Ser. Percy Fitzpatrick Inst. African Ornithol. no. 11. 27 p. 1963. 30¢. WR 115: 40

A briefly annotated, mimeographed list of 231 spp.

Markus, Miles B. AN ANNOTATED LIST OF THE BIRDS OF PRETORIA CITY. South African Avifauna Ser. Percy Fitzpatrick Inst. African Ornithol. no. 18. 50 p. 1964. 75¢. WR 115: 40

[Univ. Pretoria, Transvaal, South Africa.] Lists 322 spp.

Morley, Ashley. THE BIRDS OF FLORIDA NORTH. South African Avifauna Ser. Percy Fitzpatrick Inst. African Ornithol. no. 16. 26 p. 1964. 20¢. WR 115: 40

Annotated list of 107 spp.

Parnell, James F., and Thomas L. Quay. THE SUMMER BIRDS OF THE TOXAWAY RIVER GORGE OF SOUTHWESTERN NORTH CAROLINA. Wilson Bull. 76(2): 138-146. June 1964. WR 115: 41

[N. C. State Coll., Raleigh.] Bird populations were censused, through the use of timed transect walks in five major types of habitat. Results were: pine flats at mouth of the gorge, 45 spp.; mixed mesophytic slopes and coves, 34 spp.; oak forests, 33 spp.; pine flats in the gorge, 30 spp.; pine ridges, 25 spp. Eleven spp. were recorded in all five habitats and 12 were restricted to single habitats.--From summ.

Paspaleva-Antonova, Maria. [A CONTRIBUTION TO THE ORNITHOFAUNA OF LJULIN MOUNTAINS (WESTERN BULGARIA).] Bulgarska Akad. Nauk. Izvest. Zool. Inst. 16: 35-59. 1964. In Bulgarian with Russian and German summ. WR 115: 41

Annotated list of 142 spp.

Pienaar, U. de V., and O. P. M. Prozesky. AN AMENDED CHECK-LIST OF THE BIRDS OF THE KRUGER NATIONAL PARK. Koedoe 4: 117-140. 1961. WR 115: 41

[Kruger Natl. Park, Skukuza, Republic South Africa.] A list of 412 spp. is given, without annotations. Presence of some species lacks confirmation.

Pöyhönen, O. [THE BIRD FAUNA FROM SOME LAKES IN CENTRAL FINLAND.] Ornis Fennica 39: 67-77. 1962. [From Auk 81(3), 1964. In Finnish with German summ.] WR 115: 41

Prostov, A. [INVESTIGATIONS OF THE ORNITHOFAUNA IN THE BURGAS REGION (BULGARIA).] Bulgarska Akad. Nauk. Izvest. Zool. Inst. 15: 5-68, 1 fig. 1964. In Bulgarian with summaries in Russian and German. WR 115: 41

Prozesky, O. P. M., and Clem Haagner. A CHECK-LIST OF THE BIRDS OF THE KALAHARI GEMSBOK PARK. Koedoe 5: 171-182. 1962. WR 115: 41

[Transvaal Museum, Pretoria, Transvaal, Union South Africa.] A total of 166 spp. is listed.

Skead, C. J. THE BIRDS OF KING WILLIAM'S TOWN DISTRICT. South African Avifauna Ser. Percy Fitzpatrick Inst. African Ornithol. no. 15. 70 p. 1964. 50¢. WR 115: 41

Annotated list of the birds of the area.

Snell, Margaret L. LIST OF BIRDS OF THE PETERHOUSE-SPRINGVALE AREA. South African Avifauna Ser. Percy Fitzpatrick Inst. African Ornithol. no. 17. 21 p. 1964. 20¢. WR 115: 41

Contains very brief annotations.

Wauer, Roland H. ECOLOGICAL DISTRIBUTION OF THE BIRDS OF THE PANAMINT MOUNTAINS, CALIFORNIA. Condor 66(4): 287-301, 6 figs. July 1964. WR 115: 41

[Zion Natl. Park, Utah.] Summary: Of 144 species reported for the Panamint Mountains, 75 are considered to be breeding. Three species nest in the valley alluvial fans, 16 species nest in the lower canyons, 11 species nest in the open sage flats and valley, 41 species nest in the piñon-juniper woodlands, 19 species nest in the limber pine association, and 8 species nest in the bristlecone pine association. Only one species, the rock wren, was found to nest in all of the associations. Forty-three species were found to nest in only one association.

West, Oliver, Felix B. Wright, and Godfrey Symons. THE BIRDS OF WEENEN COUNTY, NATAL. South African Avifauna Ser. Percy Fitzpatrick Inst. African Ornithol. no. 14. 50 p. 1964. 75¢. WR 115: 41

[Dept. Res. & Specialist Serv., Box 8025, Causeway, Salisbury, Southern Rhodesia.] Annotated list of 269 spp. with information of the topography, geology, climate and vegetation of the region.

Winterbottom, J. M. A PRELIMINARY LIST OF THE BIRDS OF THE BONTEBOK NATIONAL PARK, SWELLENDAM. Koedoe 5: 183-188. 1962. WR 115: 42
[Univ. Cape Town, Cape Town, Cape of Good Hope, Union South Africa.] Annotated list of 105 spp. observed during 1961-1962.

Winterbottom, J. M. A LIST OF THE BIRDS OF THE CLANWILLIAM DISTRICT. South African Avifauna Ser. Percy Fitzpatrick Inst. African Ornithol. no. 12. 24 p. 1963. 20¢. WR 115: 42

Winterbottom, J. M. LIST OF THE BIRDS OF VERKEERDEVLEI, TOUWS RIVER. South African Avifauna Ser. Percy Fitzpatrick Inst. African Ornithol. no. 19. 11 p. 1964. 10¢. WR 115: 42
Listing of 97 spp. with notes on their occurrence.

BIRDS--POPULATIONS & FLUCTUATIONS

Enemar, A. A COMPARISON BETWEEN THE BIRD CENSUS RESULTS OF DIFFERENT ORNITHOLOGISTS. Vår Fågelvärld 21: 109-120. 1962. [From Auk 81(3), 1964.] WR 115: 42

Lack, David. SIGNIFICANCE OF CLUTCH-SIZE IN SWIFT AND GROUSE. Nature 203 (4940): 98-99. 4 July 1964. WR 115: 42

Mayfield, Harold. YEARLY FLUCTUATIONS IN A POPULATION OF PURPLE MARTINS. Auk 81(3): 274-280, 1 fig. July 1964. WR 115: 42
[River Road RFD, Waterville, Ohio.] Fluctuations in a local breeding population of purple martins (Progne subis) were measured by annual counts of nests over a 10-year period, 1953 through 1962. The sample was provided by 18 to 28 identical martin houses, each with 16 cavities, placed at scattered locations in and near Toledo, Ohio.--From summ.

Schumacher, Della M. AGES OF SOME CAPTIVE WILD BIRDS. Condor 66(4): 309. July 1964. WR 115: 42
Western tanager (Piranga ludoviciana), 15 years; white-eye (Zosterops palpebrosa), 22 years; honeycreeper (Cyanerpes cyaneus), 24 years; sparrow hawk (Falco sparverius), 14 years; saw-whet owl (Aegolius acadicus), 17 years.

Swartz, L. G. SPECIES COMPOSITION AND POPULATIONS OF SEA BIRD COLONIES AT CAPE THOMPSON, ALASKA. Proc. 16th Intern. Congr. Zool. 1: 255. [1964.] WR 115: 42
[Univ. Alaska. College.] The breeding populations of 9 spp. of sea birds were censused during 1959, 1960 and 1961.

Taylor, John W. HABITAT DESTRUCTION SERIOUSLY AFFECTS MARYLAND BIRDLIFE. Md. Conserv. 41(3): 2-5, illus. May-June 1964. WR 115: 42
Many species of birds no longer nest in Md. Others still nest, but in much reduced numbers since their nesting habitat has decreased. This decrease is the result of logging of the spruce forest, recreational development of beaches, urban development and marsh drainage.

BIRDS--ECONOMICS, CONTROL, MORTALITY

Ash, J. S. OBSERVATIONS IN HAMPSHIRE AND DORSET DURING THE 1963 COLD SPELL. British Birds 57(6): 221-241, 1 fig. June 1964. WR 115: 42
An account of bird mortality during a period of 74 days of cold weather. Measurements and weights were taken of birds found dead, and weights were compared with "normal" weights.

Boyd, Hugh. WILDFOWL AND OTHER WATER-BIRDS FOUND DEAD IN ENGLAND AND WALES IN JANUARY-MARCH 1963. 15th Ann. Rept. Wildfowl Trust 1962-1963. p. 20-22. 1964. WR 115: 43

Seventy correspondents reported finding more than 4000 dead birds of 34 spp. during and soon after a period of exceptionally severe winter weather.

Cook, W. A. BIRDS AT BOROUGH FEN DECOY IN 1963. 15th Ann. Rept. Wildfowl Trust 1962-63. p. 88-92. 1964. WR 115: 43

The effect on non-game birds of the severe weather of the 1962-1963 winter is discussed. Only long-tailed tits (Aegithalos caudatus) and wrens (Troglodytes troglodytes) were seriously affected.

Pilcher, R. E. M. EFFECTS OF THE COLD WINTER OF 1962-63 ON BIRDS OF THE NORTH COAST OF THE WASH. 15th Ann. Rept. Wildfowl Trust 1962-63. p. 23-26. 1964. WR 115: 43

During 26 Feb.-3 Mar. 1963, carcasses of 603 birds of 35 spp. of salt marsh, shore-, and sea-birds were recovered. Mortality was attributed to the unusually severe weather.

Seubert, John L. HIGHLIGHTS OF BIRD CONTROL RESEARCH IN ENGLAND, FRANCE, HOLLAND, AND GERMANY. Second Vertebrate Pest Control Conf., March 4 and 5, 1964, Anaheim, Calif. p. 150-159. 1964. WR 115: 43

[Patuxent Wildl. Res. Center, Laurel, Md.] Problem species, methods and extent of current control and nature and extent of research on control methods of each country are reviewed.

Wetherbee, D. K., R. P. Coppinger, B. C. Wentworth, and R. E. Walsh. ANTIFECUNDITY EFFECTS OF SUDAN BLACK B AND TRANSOVARIAN INTRAVITAL STAINING IN AVIAN POPULATION CONTROL. Univ. Mass., Coll. Agr., Expt. Sta. Bull. 543. 16 p., 3 figs. May 1964. WR 115: 43

[Univ. Mass., Amherst.] Preliminary field tests on gulls indicated that Sudan Black B has great promise in the birth-control approach to population reduction of nuisance birds and has a built-in tracing label.--From summ.

BIRDS--PARASITES AND DISEASES

Al-Dabagh, M. A. THE INCIDENCE OF BLOOD PARASITES IN WILD AND DOMESTIC BIRDS OF COLUMBUS, OHIO. Am. Midland Nat. 72(1): 148-151. July 1964. WR 115: 43

[Medical Coll., Baghdad, Iraq.] Abstract: Blood smears of 284 wild birds and 263 domestic birds of Columbus, Ohio, were examined for parasites. None of the domestic birds was infected, while 61 (21.5%) of wild birds harbored one or more species as follows: Haemoproteus (42 birds), Leucocytozoon (15), Plasmodium (8), microfilaria (1). Mixed infections were observed in 5 wild ducks and 2 mourning doves.

Hyland, Kerwin E., and Lee E. TerBush. SOME POSSIBLE METHODS FOR THE TRANSFERRAL OF AVIAN NASAL MITES. Proc. 16th Intern. Congr. Zool. 1: 152. [1964.] WR 115: 43

[Univ. R. I., Kingston.] The most likely means of transferral of avian nasal mites from bird to bird are suggested based on studies of the life history of 3 families of these mites.

Murton, R. K. DO BIRDS TRANSMIT FOOT AND MOUTH DISEASE? Ibis 106(3): 289-298, 1 fig. July 1964. WR 115: 43

[Ministry Agr., Fisheries & Food, Worplesdon, Surrey, England.] It is considered unlikely that birds are responsible for transmission of foot and mouth disease.

Tuff, Donald Wray. THE MALLOPHAGA OF THE CICONIIFORMES OF AMERICA NORTH OF MEXICO. Ph.D. thesis, Texas A.& M. Univ. 1963. [From abstr. in Dissertation Abstr. 25(1), 1964.] WR 115: 44
Thirty spp. of mallophaga are reported for the ciconiiformes.

GAME BIRDS--GENERAL

Angus, A., and K. J. Wilson. OBSERVATIONS ON THE DIET OF SOME GAME BIRDS AND COLUMBIDAE IN NORTHERN RHODESIA. 1. THE HELMETED GUINEAFOWL (NUMIDA MELEAGRIS). Puku 2: 1-9. 1964. WR 115: 44
Tables are given of items found in crops of birds collected at different times of the year. The helmeted guineafowl was found to be omnivorous but chiefly graminivorous.

Benson, C. W. BREEDING SEASONS OF GAME BIRDS IN THE FEDERATION OF RHODESIA AND NYASALAND. Puku 1: 51-69. 1963. WR 115: 44
With a table indicating months of egg-laying for 40 spp. of game birds. The data are tabulated for Northern Rhodesia, Southern Rhodesia and Nyasaland by species and month.

Lacher, John R., and Dorothy D. Lacher. A MOBILE CANNON NET TRAP. J. Wildl. Mgmt. 28(3): 595-597, 3 figs. July 1964. WR 115: 44
[Univ. Colo., Boulder.] Abstract: An adaptation of a cannon net for trapping grouse (Centrocercus urophasianus and Dendragapus obscurus) was made by mounting the cannons on a welded iron framework on the front of a jeep. The net was packed in a paper box on a wooden platform under the cannon, and the metal eyes of the net were fastened to the platform with masking tape so they could not catch in the net and tear it. This net trap appears to be useful for catching a small number of birds when time is limited.

QUAIL

Mather, F. B., and W. O. Wilson. POST-NATAL TESTICULAR DEVELOPMENT IN JAPANESE QUAIL (COTURNIX COTURNIX JAPONICA). Poultry Sci. 43(4): 860-864, 3 figs. July 1964. WR 115: 44
[Univ. Calif., Davis.] Full spermatogenic activity was reached at 36 days of age when the combined weight of the testes exceeded 1000 mg.--From summ.

Newlon, Charles F., Thomas S. Baskett, Robert P. Breitenbach, and Jack A. Stanford. SUSTAINING VALUES OF EMERGENCY FOODS FOR BOBWHITES. J. Wildl. Mgmt. 28(3): 532-542, 4 figs. July 1964. WR 115: 44
[William Jewell Coll., Liberty, Mo.] Abstract: Sustaining values of foods that might be useful to bobwhites (Colinus virginianus) under emergency conditions were tested by feeding penned bobwhites single foods during fall and winter and observing their survival and condition. In the pilot study, 11 foods were tested for 38 days; 132 bobwhites of mixed sex and age-groups were employed. In the principal study, 6 of these foods were tested for 14 days on 84 young birds of both sexes. On the basis of food consumption, weight performance, depot fat, lipid levels, and other physiological measures, pearl millet (Pennisetum glaucum), sassafras (Sassafras albidum), foxtail millet (Setaria italica), and milo (Sorgum vulgare) had the highest sustaining values among the foods tested. Their values exceeded those of such well-known winter staples for bobwhites as corn (Zea mays) and Korean lespedeza (Lespedeza stipulacea). Sericea (Lespedeza cuneata), rose (Rosa multiflora) hips, and smooth sumac (Rhus glabra) ranked lowest.

Stanford, Jack A. PRIMER ON BOB WHITE. Mo. Conserv. 25(8): 1-3, illus. Aug. 1964. WR 115: 44
[Mo. Conserv. Comm., Jefferson City.] An introduction to bobwhite management. This first article in a planned series deals with population trends and plant succession.

PHEASANTS

Bohl, Wayne H. A STUDY AND REVIEW OF THE JAPANESE GREEN AND THE KOREAN RING-NECKED PHEASANTS. US F&WS Spec. Sci. Rept.--Wildl. no. 83. vi + 65 p., 35 figs. June 1964. WR 115: 45

[Bur. Sport Fisheries & Wildl., Washington, D. C.] Abstract: Following a general review of the taxonomy, distribution and descriptions of the Japanese green pheasants (Phasianus versicolor) and the Korean and Manchurian ring-necked pheasants (P. c. karpowi and P. c. pallasi) detailed consideration is given to their habitat and cover preferences, climatic and food and water requirements, general habits and reproductive capacity. Their relation to agriculture, to other game birds within their native range, an evaluation of their potentialities for trial introduction into the United States and suggestions for game farm propagation are also discussed.

Gilbertson, Donald E., and Ernest J. Hugghins. HELMINTH INFECTIONS IN PHEASANTS FROM BROWN COUNTY, SOUTH DAKOTA. J. Wildl. Mgmt. 28(3): 543-546, 1 fig. July 1964. WR 115: 45

[Univ. Cincinnati, Cincinnati, Ohio.] Abstract: The viscera of 262 wild ring-necked pheasants (Phasianus colchicus) were examined for helminth parasites. All of the birds were taken in Brown County, South Dakota, during various months of 1961. The collection consisted of 92 adults, 165 juveniles (young-of-the-year), and 5 birds of undetermined age. Parasitic worms were found in 97 (37.02 percent) of the pheasants, with 86 harboring only a single species of helminth. The cecal worm (Heterakis gallinarum) was the most prevalent helminth, occurring in 92 (35.11 percent) of the birds; this incidence was distributed throughout the year and was significantly higher in adult birds. The tapeworm (Choanotaenia infundibulum) was found in 15 birds (5.73 percent), but did not occur in any of the 106 birds taken during the winter. The intestinal nematode (Ascaridia galli) was found in one bird.

Joselyn, G. Blair, and John E. Warnock. VALUE OF FEDERAL FEED GRAIN PROGRAM TO PRODUCTION OF PHEASANTS IN ILLINOIS. J. Wildl. Mgmt. 28(3): 547-551. July 1964. WR 115: 45

Abstract: Data are presented on the beneficial effects of the Federal Feed Grain Program on the production of pheasants (Phasianus colchicus) on a 23,200-acre study area in Ford and McLean counties, east-central Illinois, in 1962 and 1963. One hundred 10-acre plots (4.3 percent of the study area) were cover-mapped to obtain a sample of land-use practices and were searched for pheasant nests in both years. Farmers with land on the study plots were interviewed to learn what crops would have been planted on the plots in the absence of the Federal Feed Grain Program. In 1962, 16.5 percent of the acreage in harvested hay, 61.6 percent of the acreage in unharvested hay, and 10.5 percent of the acreage in small grain on the 100 plots would have been planted to corn or soybeans, in the absence of the program. In 1963, without the federal program, there would have been 4.7 percent less harvested hay, 54.0 percent less unharvested hay, and 52.9 percent less small grain on the 100 plots. Of all successful nests located on the plots, 38.8 percent in 1962 and 27.5 percent in 1963 occurred on land which would have been planted in corn or soybeans, in the absence of the Federal Feed Grain Program. Changes are recommended in the regulations for mowing unharvested acres to make the program more effective for the production of pheasants in Illinois.

Warnock, John E., and G. Blair Joselyn. NESTING OF PHEASANTS IN SOYBEAN FIELDS. J. Wildl. Mgmt. 28(3): 589-592. July 1964. WR 115: 45

[Ill. Nat. Hist. Surv., Urbana.] Abstract: A search of 50 acres of soybeans, comprising portions of 11 fields on a 23,200-acre study area in east-central Illinois, indicated a density of 10 pheasant (Phasianus colchicus) nests per 100 acres of soybeans. Eggs hatched in three of the five nests (60 percent) located in soybean fields. In 1963, as much as 13 percent of all successful pheasant nests on the study area may have been established in soybean acreage.

Christensen, Glen C., Wayne H. Bohl, and Gardiner Bump. A STUDY AND REVIEW OF THE COMMON INDIAN SANDGROUSE AND THE IMPERIAL SANDGROUSE. US F&WS, Spec. Sci. Rept.--Wildl. no. 84. viii + 71 p., 38 figs. June 1964. WR 115: 46

Abstract: This report summarizes the taxonomy and distribution of the sandgrouse family (Pteroclididae) in Europe, Asia, and Africa. Two representatives, the common Indian sandgrouse (Pterocles exustus hindustan) and the imperial or black-bellied sandgrouse (Pterocles orientalis) are singled out for detailed consideration because trial releases of these into the western United States have been made or are contemplated. Topics covered include descriptions, habitats, climatic requirements, food and water, general habits, effect of predation, reproductive capacity, and diseases and parasites. Also considered are their relation to agriculture and to other game species together with notes on the breeding, rearing, and trapping of these sandgrouse.

Georgiev, Zh. [SOME ADDITIONAL INFORMATION ON THE REPRODUCTION OF TURKISH CHUKAR PARTRIDGE (ALECTORIS GRAECA CYPRIOTES HART.).] Bulgarska Akad. Nauk., Izvest. Zool. Inst. 16: 17-22. 1964. In Bulgarian with Russian and German summ. WR 115: 46

Helminen, Matti. COMPOSITION OF THE FINNISH POPULATIONS OF CAPERCAILLIE, TETRAO UROGALLUS, AND BLACK GROUSE, LYRURUS TETRIX, IN THE AUTUMNS OF 1952-1961, AS REVEALED BY A STUDY OF WINGS. Papers on Game Res. (Helsinki) 23. 124 p., 28 figs. 1963. WR 115: 46

Based on observations on wing development of captive birds and studies of 6734 hunter-collected wings of capercaillie and 8207 of black grouse, it was concluded that wing-aging of these two species can be reliable. The age ratio of birds in the hunting bag also gave a usable indication of breeding success, but the proportion of juvenile birds was higher in the bag than in the population. There were also more ♂♂ than ♀♀ in the bag but not in the population, reflecting some selection of ♂♂ by hunters. Mean annual adult mortality of capercaillie and black grouse is 40-60%. Of the black grouse trapped on display grounds in the spring, 44% were juveniles. Annual variations in breeding success were caused chiefly by variations in mortality of chicks.--From summ.

Jones, Robert E. HABITAT USED BY LESSER PRAIRIE CHICKENS FOR FEEDING RELATED TO SEASONAL BEHAVIOR OF PLANTS IN BEAVER COUNTY, OKLAHOMA. Southwestern Nat. 9(3): 111-117, 1 fig. 20 Aug. 1964. WR 115: 46

[Wash. State Univ., Pullman.] Two plant communities, the half-shrub association and the shortgrass association, were analyzed monthly to relate lesser prairie chicken (Tympanuchus pallidicinctus) use to seasonal changes in plant composition. Of the 6 months during which plants were important food items, prairie chickens used the half-shrub association for feeding 5 months and the shortgrass community for 1 month.--From abstr.

Pynnönen, Alpi. PYYN RUNSAUDENVAIHTELUSTA. [VARIATIONS IN THE ABUNDANCE OF THE HAZEL GROUSE (TETRASTES BONASIA).] Suomen Riista 16: 100-108, 1 fig. 1963. [In Finnish with English summ.] WR 115: 46

The hazel grouse population in Finland decreased after reaching a high density level in 1954. "It seems certain that one reason for the decline of the hazel grouse populations in 1954 was the scarcity of hen birds in comparison with cocks.... After the population has increased beyond the limits of the suitable habitats available, the stimulation caused by the congestion apparently results in an unusually strong migratory urge. The hazel grouse wandering about over very wide areas in the forests, which are chiefly hen birds, are more vulnerable to enemies and hunger than are the males, which in most cases stay within their territories."--From summ.

Ryder, Ronald A. A PARTIAL BIBLIOGRAPHY OF REFERENCES ON THE SAGE GROUSE (CENTROCERCUS UROPHASIANUS). Colo. State Univ. i + 28 p., mimeo. 1 Aug. 1964. WR 115: 46

[Colo. State Univ., Fort Collins.] Listing of 398 references classified into 15 categories of emphasis.

Uusvaara, Olli. PYYN ELINYMPÄRISTÖJEN METSIKKÖRAKENTEESTA. [THE STRUCTURE OF THE HABITATS OF THE HAZEL GROUSE (TETRASTES BONASIA).] Suomen Riista 16: 31-45, 12 figs. 1963. [In Finnish with English summ.] WR 115: 47

Mixed stands of spruce (Picea spp.), birch (Betula spp.) and alder (Alnus spp.) provide the best habitat for the hazel grouse. Forest management practices most seriously affecting the welfare of the hazel grouse are reduction of alder stands, general removal of undergrowth and opening of the forest canopy.--From summ.

TURKEY

Powell, James, Richard McClelland, and George Kain. BUILDING A TURKEY FEEDER. Fla. Wildl. 18(3): 18-19, illus. Aug. 1964. WR 115: 47

[1219 W. Palm St., Lantana, Fla.] Specifications for construction of an elevated turkey feeder. "While it takes a little longer for turkeys to learn to utilize this type [feeder], the savings [resulting from reduction of waste] are well worthwhile."

Thomas, Jack Ward, and Rodney G. Marburger. COLORED LEG MARKERS FOR WILD TURKEYS. J. Wildl. Mgmt. 28(3): 552-555, 2 figs. July 1964. WR 115: 47

[Texas Parks & Wildl. Dept., Llano.] Abstract: Strips of nylon, impregnated with fluorescent-colored vinyl and then attached to aluminum, butt-end leg bands, were used to mark 330 Rio Grande wild turkeys (Meleagris gallopavo) during the years 1961-63. Seventy-four percent of the marked turkeys retrapped after 11-13 months retained colored markers, as did 50 percent of the birds retrapped after 23-25 months. Markers were identifiable with the naked eye at approximately 100 yards. The use of lock-type bands would probably increase the efficiency of the technique by preventing band and marker loss.

DOVES AND PIGEONS

Elder, William H. CHEMICAL INHIBITORS OF OVULATION IN THE PIGEON. J. Wildl. Mgmt. 28(3): 556-575, 3 figs. July 1964. WR 115: 47

[Univ. Mo., Columbia.] Abstract: The recent increase in the numbers of several species of native blackbirds as well as the increasing concern over the numbers of such exotic birds as starlings (Sturnus vulgaris), house sparrows (Passer domesticus), and pigeons (Columba livia) has prompted widespread study of control methods. This paper reports the results of a 4-year search for a practical oral contraceptive for nuisance birds. Most substances found effective in inhibiting ovulation in other animals proved to have little effect on pigeons, even in nearly lethal doses. Compounds used included: tranquilizers, gametocides, antithyroid compounds, hypophyseal inhibitors, insecticides, fungicides, and coccidiostats. Only provera at 0.1 percent or more in the diet and arasan at 0.35 percent inhibited ovulation without severe debilitation of the birds; the effect was lost as soon as the materials were withdrawn from the diets. Practical results were obtained with the anticholesterol compound SC-12937 (22, 25-diazacholestanol dihydrochloride). When this compound constituted 0.1 percent of the diet for 10 days in early November, no eggs were laid for 3 months, full fertility among some birds was not reached for 6 months, and some remained anovulatory for 12 months. Following spring feeding, ovulation was almost completely inhibited for 3 months, and after 6 months remained 75 percent inhibited.

Funk, Howard D. FOR TASTIER DOVES... Colo. Outdoors 13(4): 36-37, illus. July-Aug. 1964. WR 115: 47

[Fort Collins, Colo.] Step-by-step instructions for field-dressing mourning doves.

DOVES AND PIGEONS--Continued

Hutt, Art. THE MOURNING DOVE. Fla. Wildl. 18(4): 12-16, illus. Sept. 1964. WR 115: 48

With 2,000,000 doves annually bagged in Fla. and a cripple-loss of approximately one bird for every four bagged, only 4% of the annual mortality can be charged to hunting. "The area in which the injustice lies is in the man-made, somewhat archaic regulations which say that the bulk of these birds must be wasted through natural death rather than be harvested by the sportsman."

WATERFOWL

Allen, R. H., and G. E. Rutter. THE SHELDUCK POPULATION OF THE MERSEY AREA IN SUMMER, 1957-1963. 15th Ann. Rept. Wildfowl Trust 1962-63. p. 45-46. 1964. WR 115: 48

During the 1963 breeding season (following heavy winter mortality), the number of ducklings found was above average, as was the ratio of ducklings to adults. Molt migration counts following the 1963 nesting season were, however, the lowest in 14 years of observations.

Beard, Elizabeth B. DUCK BROOD BEHAVIOR AT THE SENEY NATIONAL WILDLIFE REFUGE. J. Wildl. Mgmt. 28(3): 492-521, 8 figs. July 1964. WR 115: 48

[Elizabeth B. Losey, High Hill Farm, Germfask, Mich.] Daily observations of duck broods living undisturbed in their natural environment and unaware of an observer's presence were made during the summer of 1950 and 1951 at a 20-acre marsh in the Seney National Wildlife Refuge on the Upper Peninsula of Michigan. Observations were made of duck broods of the following species: blue-winged teal (Anas discors), black duck (Anas rubripes), wood duck (Aix sponsa), mallard (Anas platyrhynchos), hooded merganser (Lophodytes cucullatus), ring-necked duck (Aythya collaris), and American widgeon (Mareca americana). There appeared to be no conflict between the ducks and the deer (Odocoileus virginianus), beaver (Castor canadensis), and muskrats (Ondatra zibethicus) which also inhabited the marsh. The mink (Mustela vison), however, was shown to be a potentially important predator.--From abstr.

Beer, John. WILDFOWL MORTALITY IN THE SLIMBRIDGE COLLECTION DURING THE WINTERS OF 1961-62 AND 1962-63. 15th Ann. Rept. Wildfowl Trust 1962-63. p. 50-56. 1964. WR 115: 48

Summary: The unusually cold winters of 1961-62 and 1962-63 caused a marked increase in mortality of established Anatidae kept outdoors at Slimbridge. Whistling Ducks (Dendrocygnini) showed the highest mortality while the true geese and swans (Anserini) were hardly affected. Other tribes were intermediate. In general the smaller species from hotter climates suffered a higher mortality while the increase, compared with normal winters, was proportionately greater in these species than in others. Comparison is made with mortality in wild birds. Practical measures to reduce mortality under these adverse environmental conditions are suggested.

Beer, J. V., and H. Boyd. DEATHS OF WILD WHITE-FRONTED GEESE AT SLIMBRIDGE IN JANUARY 1963. 15th Ann. Rept. Wildfowl Trust 1962-63. p. 40-44. 1964. WR 115: 48

Fifteen white-fronted geese (Anser albifrons) found dead or dying were underweight, and four were considered to have died from starvation in connection with severe winter weather.

Boyd, Hugh. BARNACLE GEESE CAUGHT IN DUMBRIESSHIRE IN FEBRUARY 1963. 15th Ann. Rept. Wildfowl Trust 1962-63. p. 75-76. 1964. WR 115: 48

Cannon netting in Dumfriesshire resulted in the capture of 316 barnacle geese. Included in the 316 were 94 of 685 banded in Spitsbergen in the summer of 1962. None was taken of 609 banded in East Greenland in 1961 and none of those banded in the Netherlands. Using the marking recapture method, estimates were made of the total Spitsbergen barnacle goose population. Weight data were given.--From summ.

Boyd, Hugh. RECOVERIES OF DUCKS RINGED IN ABERDEENSHIRE BY MISS E. A. GARDEN. 15th Ann. Rept. Wildfowl Trust 1962-63. p. 77-78. 1964. WR 115: 49
Banding and recovery data for 40 recoveries from nearly 500 banded ducks are tabulated.

Boyd, Hugh, and Bernard King. EFFECTS OF A SEVERE WINTER ON DUCKS BREEDING IN NORTH SOMERSET. 15th Ann. Rept. Wildfowl Trust 1962-63. p. 47-50. 1964. WR 115: 49
About 140 pairs of mallards, 13 pairs of shovelers and 120 pairs of tufted ducks attempted to breed at two reservoirs in Somerset in 1963. These numbers were 6%, 59% and 15% respectively lower than the average for the previous six years. Breeding success in 1963 was unusually high.--From summ.

Boyd, Hugh, and Malcolm Ogilvie. LOSSES OF MUTE SWANS IN ENGLAND IN THE WINTER OF 1962-63. 15th Ann. Rept. Wildfowl Trust 1962-63. p. 37-40. 1964. WR 115: 49
The cold winter of 1962-63 led to a pronounced reduction in the mute swan (Cygnus olor) population, but no precise estimate was made of the extent of the decline.

Brazda, A. R., M. M. Smith, R. H. Smith, G. H. Jensen, H. A. Hansen, Rossalius C. Hanson, and J. Donald Smith. WINTER WATERFOWL SURVEY--MEXICO / JANUARY 1964. US F&WS (Washington, D. C.). iii + 81 p. July 1964. WR 115: 49
Habitat conditions, flight schedules and waterfowl status are summarized by regions (east coast, west coast, interior highlands). Tables are also given with totals by species. Habitat conditions were generally good, and populations were generally above those of 1963.

Brotherston, William. THE NUMBERS AND BEHAVIOUR OF GEESE IN THE LOTHIANS AND BERWICKSHIRE. 15th Ann. Rept. Wildfowl Trust 1962-63. p. 57-70, 1 fig. 1964. WR 115: 49
Local abundance of pink-footed geese (Anser brachyrhynchus) is largely determined by food availability, chiefly stubble fields in fall and meadows in winter. Before World War II, the population of pink-footed geese in the area was about 5000; in recent years there have been peaks of about 12,000 of these geese. Greylag geese (Anser anser) have recently reached maximum populations of 1000-1300. The increase in the goose population was associated with a shift of roosting from coastal to inland situations where improved agricultural methods caused increase in crops of oats, barley and grass. Data are given on migration dates and on feeding and roosting behavior.--From summ.

Cooch, F. G. A PRELIMINARY STUDY OF THE SURVIVAL VALUE OF A FUNCTIONAL SALT GLAND IN PRAIRIE ANATIDAE. Auk 81(3): 380-393. July 1964. WR 115: 49
[Canadian Wildl. Serv., Ottawa, Ontario.] Water birds inhabiting the Great Plains of North America possess salt glands which may function as effectively as salt glands of marine birds. Malfunction of the gland, caused by blockage of the gland's innervation with neurotoxin liberated by Clostridium botulinum, can lead to death.--From summ.

Dennis, R. H. CAPTURE OF MOULTING CANADA GEESE IN THE BEAULY FIRTH. 15th Ann. Rept. Wildfowl Trust 1962-63. p. 71-74, 1 fig. 1964. WR 115: 49
Thirty-nine of a flock of 153 flightless adult Canada geese (Branta canadensis) were captured. Some of the captured birds had been earlier banded, and the first evidence of "moult migration" in Canada geese was thus obtained. Weights and measurements are given.--From summ.

de Vos, A. ACTIVITIES OF A MALLARD (ANAS PLATYRHYNCHOS) BROOD AFTER HATCHING. Auk 81(3): 442 July 1964. WR 115: 49
[Ontario Agr. Coll., Guelph, Canada.] A hen with her newly hatched brood had just left their nest when the ducklings were pursued and pecked by older mallard ducklings. Following this attack the hen returned with her brood to the nest, and they remained at or near the nest through at least the following several hours. The brood left the nest the following day but returned again to remain on the nest through the next night.

Dzubin, Alex. TWO POSSIBLE WILD HYBRIDS OF THE WHITE-FRONTED GOOSE X SNOW GOOSE. Blue Jay 22(3): 106-108. Sept. 1964. WR 115: 50
[Canadian Wildl. Serv., Saskatoon, Saskatchewan, Canada.]

Garden, E. A. DUCK-TRAPPING METHODS. 15th Ann. Rept. Wildfowl Trust 1962-63. p. 93-95, 3 figs. 1964. WR 115: 50
Specifications are given for three types of funnel traps. The chief features making the traps different from standard funnel traps were adaptations to make the traps suitable for use in tidal waters. Bottoms of the walls were made of 3-inch-mesh chain-link netting through which shorebirds could escape. An open space was also provided at the top of the traps through which waterfowl could escape if the tide proved unexpectedly high.

Gershman, M., J. F. Witter, H. E. Spencer, Jr., and A. Kalvaitis. CASE REPORT: EPIZOOTIC OF FOWL CHOLERA IN THE COMMON EIDER DUCK. J. Wildl. Mgmt. 28(3): 587-589. July 1964. WR 115: 50
[Univ. Maine, Orono.] Abstract: An epizootic was observed in eider ducks (Somateria mollissima) which were nesting on islands off the Maine coast. On the three islands where losses were observed, over 200 birds died and more than 100 nests were lost. Losses were attributed to infection with Pasteurella multocida, the cause of fowl cholera. An attempt was made to eradicate the disease by removing residual populations; burning carcasses, eggs, and nests; and spraying existing water puddles with a cresylic compound. Inspections 2 weeks later revealed no further mortality. No new outbreaks have been reported to date.

Harrison, Jeffery, and Michael Hudson. SOME EFFECTS OF SEVERE WEATHER ON WILDFOWL IN KENT IN 1962-63. 15th Ann. Rept. Wildfowl Trust 1962-63. p. 26-32. 1964. WR 115: 50
There was heavy mortality among shelducks (Tadorna tadorna) and widgeons (Mareca penelope), particularly during the period 15-26 Jan. More ♀ than ♂ widgeons were found dead, although there were more ♂♂ in the population. Dead shelducks, too, were mostly ♀♀. Of 16 ducks assumed to have starved, only 4 contained no food. Hunting should be stopped when the inter-tidal zone freezes.

Harrison, Jeffery, and John Wardell. W.A.G.B.I. HAND-REARED MALLARD IN THE COLD SPELL OF 1962-63. 15th Ann. Rept. Wildfowl Trust 1962-63. p. 33-37. 1964. WR 115: 50
Hand-reared birds migrated more during and following a period of unusually severe winter weather than in winters with less severe weather. There was some increase in mortality in connection with unusually severe weather.

Hori, John. THE BREEDING BIOLOGY OF THE SHELDUCK TADORNA TADORNA. Ibis 106(3): 333-360, 9 figs. July 1964. WR 115: 50
[Field House, Clapper Lane, Staplehurst, Kent, England.]

Hori, John. PARENTAL CARE IN THE SHELDUCK. 15th Ann. Rept. Wildfowl Trust 1962-63. p. 100-103. 1964. WR 115: 50
Summary: The behaviour of Shelduck during the brood season is described and discussed. Attacks by adults on their own broods, and the behaviour of ducklings and of birds assumed to be 'failed breeders' seem to provide a mechanism of crêche formation.

Hori, John. SHELDUCK FOOD SUPPLY IN SEVERE WEATHER. 15th Ann. Rept. Wildfowl Trust 1962-63. p. 44. 1964. WR 115: 50
About 5% of the shelducks (Tadorna tadorna) in the Thames estuary were found dead. Of 9 stomachs examined, 8 contained food. Only 3 of the 9 birds were emaciated.

Johnsgard, Paul A. OBSERVATIONS ON THE BIOLOGY OF THE SPECTACLED EIDER. 15th Ann. Rept. Wildfowl Trust 1962-63. p. 104-107, illus. 1964. WR 115: 51
Information is given on abundance and composition of spectacled eider flocks, nesting and territoriality, appearance and general behavior, and rearing of young, based on observations in Alaska.

Jones, Robert D., Jr. AGE GROUP COUNTS OF BLACK BRANT IN IZEMBEK BAY, ALASKA. 15th Ann. Rept. Wildfowl Trust 1962-63. p. 147-148. 1964. WR 115: 51
[Aleutian Islands Natl. Wildl. Refuge, Cold Bay, Alaska.] Black brant (Branta bernicla orientalis) were censused in a post-nuptial concentration following a breeding season with extensive storm damage to eggs and newly hatched young. The census showed 23% of 5211 to be first year birds.

Kear, Janet. COLOUR PREFERENCE IN YOUNG ANATIDAE. Ibis 106(3): 361-369, 1 fig. July 1964. WR 115: 51
[Wildfowl Trust, Slimbridge, Gloucestershire, England.] Summary: The young of 41 species of Anatidae, mainly from the Anserini, Tadornini, Anatini and Cairinini were tested for colour preference. For comparison, two species of gull, two of rails and three of pheasants were tested in the same experimental apparatus--a small closed box in which gelatine filter spots, red, orange, yellow, green, blue-green and blue, could be placed before a source of indirect light. A preference for green was general throughout the ducks and geese, and some species and individuals also pecked selectively at yellow. The tribes and genera differed in the extent of their avoidance of other colours; geese of the genus Branta and the sheldgeese tended to ignore blue, while Anser geese, the Anatini and Cairinini markedly ignored red and orange. Members of the Phasianidae showed a similar preference for green. It was confirmed that gulls and the Moorhen, which normally peck at red on the adult's bill to obtain food, select red spots, as also does the Coot, although here the parent's bill is white. It is concluded that there are certain broad correlations between feeding habit and the birds' unlearned colour preference in the pecking response, but more importantly, that closely related species tend to show similar preferences even when their food is quite different.

Koskimies, Jukka, and Lauri Lahti. COLD-HARDINESS OF THE NEWLY HATCHED YOUNG IN RELATION TO ECOLOGY AND DISTRIBUTION IN TEN SPECIES OF EUROPEAN DUCKS. Auk 81(3): 281-307, 10 figs. July 1964. WR 115: 51
[IBM, Helsinki, Finland.] Ducklings exposed for 20 minutes to 20 and 10 C exhibited much higher cold-hardiness than gallinaceous birds and gulls of the same age. The young of Aythya fuligula, Bucephala clangula, Somateria mollissima, and Anas penelope endured prolonged exposure to air temperatures of 8-10 C, some of them maintaining their normal high body temperature for as much as 18 hours. At 0-2 C one duckling of Mergus merganser maintained complete thermoregulation during an exposure of 15 hours and three young of M. serrator for at least 3 hours. Two young of Melanitta fusca lost control of their body temperature after 5 and 14 hours, respectively. In all three young of Anas platyrhynchos exposed to 0-2 C, thermoregulation collapsed instantly. Metabolic rates were higher in the more cold resistant species than in the less cold resistant.--From summ.

Lamb, Samuel H. FARMING FOR THE BIRDS. N. Mex. Wildl. 9(4): 15-16. July-Aug. 1964. WR 115: 51
[N. Mex. Dept. Game & Fish, Santa Fe.] The N. Mex. Dept. of Game and Fish operates 5 farms, totalling more than 700 acres, for production of food for wildlife, chiefly waterfowl. On the farms where records were kept, it was calculated that waterfowl consumed 565,000 pounds of food.

Lemmetyinen, Risto. TELKÄNPOIKASTEN SUHTAUTUMISESTA ISOKOSKELOEMOONSA. [THE BEHAVIOUR OF GOLDENEYE (BUCEPHALA CLANGULA) DUCKLINGS INCUBATED BY A GOOSANDER (MERGUS MERGANSER) HEN TOWARD THEIR FOSTER-MOTHER.] Suomen Riista 16: 91. 1963. [In Finnish with English summ.] WR 115: 52

When first disturbed, 4 goldeneye ducklings followed a ♀ of their own species before responding to the call of their foster mother (a ♀ common merganser).--From summ.

Longcore, Jerry R., and George W. Cornwell. THE CONSUMPTION OF NATURAL FOODS BY CAPTIVE CANVASBACKS AND LESSER SCAUPS. J. Wildl. Mgmt. 28(3): 527-531. July 1964. WR 115: 52

[Univ. Del., Newark.] Abstract: Twenty-one immature lesser scaups (Aythya affinis) and 16 immature canvasbacks (Aythya valisineria) were fed natural foods from October 2 to December 13, 1961. Food materials consisted primarily of wild celery (Vallisneria americana), 63.7 percent; waterweed (Elodea canadensis), 15.1 percent; and invertebrate animals, mainly mollusks, 13.3 percent. Over the 72-day feeding period, the mean daily food intake per canvasback was 0.78 pound (wet weight) or 0.05 pound (dry weight). The mean daily food intake per lesser scaup was 0.49 pound (wet weight) or 0.03 pound (dry weight). Food consumption of the canvasback increased by 74 percent and that of the lesser scaup by 66 percent with a decline in mean maximum and minimum air temperatures of 16.9 and 11.6 F, respectively. Over two-thirds of the experimental birds were in good to excellent condition at the time of necropsy. The captive ducks apparently received supplies of food adequate for maintenance of good health.

Lynch, John J., and J. R. Singleton. WINTER APPRAISALS OF ANNUAL PRODUCTIVITY IN GEESE AND OTHER WATER BIRDS. 15th Ann. Rept. Wildfowl Trust 1962-63. p. 114-126, 2 figs. 1964. WR 115: 52

[U. S. Fish & Wildl. Serv., Lafayette, La.] Plumage characteristics for aging in conjunction with observations on family grouping, aerial and ground surveys were used to evaluate production and population trends among blue, snow and white-fronted geese in La. More information is needed on the extent to which the same techniques can be applied to some additional species.

MacInnes, Charles D. THE STATUS OF ROSS'S GOOSE IN 1962-63. 15th Ann. Rept. Wildfowl Trust 1962-63. p. 137-139. 1964. WR 115: 52

[Univ. Western Ontario, London, Ontario, Canada.] Summary: In 1962-63 there were at least 25,000 Ross's Geese in California. Earlier estimates, of as few as 2,000 in 1949, were probably too low because too little was known about the distribution of Ross's Geese in California and of their mixing with Snow Geese. Attempts to estimate the population size by the mark and recapture technique, utilising 161 geese colour-marked in the Perry River breeding area in the summer of 1962 and a further 292 marked in Saskatchewan later that year, proved unsatisfactory. Some neck-bands had been lost and no red-dyed geese could be detected, but the main cause of failure was the low ratio of marked to unmarked geese.

Mills, Derek, and Duncan MacIver. WILDFOWL ON HYDRO-ELECTRIC RESERVOIRS IN THE SCOTTISH HIGHLANDS. 15th Ann. Rept. Wildfowl Trust 1962-63. p. 79-83. 1964. WR 115: 52

The number of waterfowl on an artificial reservoir was small but greater than numbers on nearby natural water areas. Suggested ways of making reservoirs more attractive to ducks include fencing sections of shore to prevent grazing, shoreline vegetation planting, and construction of islands.--From summ.

Nass, Roger D. SEX- AND AGE-RATIO BIAS OF CANNON-NETTED GEESE. J. Wildl. Mgmt. 28(3): 522-527, 2 figs. July 1964. WR 115: 53

[Bur. Sport Fisheries & Wildl., Beaumont, Texas.] Abstract: Age ratios of Canada geese (Branta canadensis), derived from catches in cannon traps, are of questionable value unless time on bait is taken into account. Findings were based on examination of 2,879 geese caught in 46 timed catches at Swan Lake National Wildlife Refuge in 1961 and 1962. The proportion of adults in the catches increased with length of time on bait. No significant differences were found in sex ratios as time on bait increased.

Ogilvie, M. A. A NESTING STUDY OF MALLARD IN BERKELEY NEW DECOY, SLIMBRIDGE. 15th Ann. Rept. Wildfowl Trust 1962-63. p. 84-88, 1 fig. 1964. WR 115: 53

The onset of laying was 3 weeks later in 1962 and 1963 than in 1961, when it began in mid-February. The average size of early clutches was 12.6 eggs and that of later ones 9.9 eggs. Though one egg was usually laid each day, there was often a gap of a day during the laying of the first seven eggs. The average incubation period of 51 clutches was 27.6 days, the range 24-32 days. 88.7% of 180 nests were successful and 82.4% of eggs hatched.--From summ.

Olney, P. J. S. INTERSPECIFIC DIET DIFFERENCES IN A GROUP OF SYMPATRIC ANATINAE. Proc. 16th Intern. Congr. Zool. 1: 256. [1964.] WR 115: 53

[Wildfowl Trust, Slimbridge, Gloucestershire, England.] In cases of abundant food items, there is considerable overlap among waterfowl species utilizing a food. There is more specialization among waterfowl use of less abundant items. Specialized utilization of food items derives from differences among waterfowl in structure and behavior.

Oring, Lewis W. PREDATION UPON FLIGHTLESS DUCKS. Wilson Bull. 76(2): 190. June 1964. WR 115: 53

[Univ. Okla., Norman.] Observations of predation on flightless ducks by mink and coyotes.

Ryder, John P. A PRELIMINARY STUDY OF THE BREEDING BIOLOGY OF ROSS'S GOOSE. 15th Ann. Rept. Wildfowl Trust 1962-63. p. 127-137, 3 figs. 1964. WR 115: 53

[Univ. Alberta, Edmonton, Alberta, Canada.] Information is given on dates of arrival, territorial behavior, nest, nest site, egg-laying, eggs, clutch size, behavior during egg-laying and incubation periods, nest abandonment and success, goslings, behavior of family groups, growth rate of young, sex ratios, banding activities, and mortality factors for Anser rossii.

Williams, G. R. EXTINCTION AND THE ANATIDAE OF NEW ZEALAND. 15th Ann. Rept. Wildfowl Trust 1962-63. p. 140-146. 1964. WR 115: 53

[Lincoln Coll., Canterbury, New Zealand.] Summary: The historical and present status of each species of Anatidae found in New Zealand is described and causes of change are discussed. Of 19 native or self-introduced species believed to have bred, five natives and two Australian stragglers became extinct before European settlement. Mergus australis is the only native species to have become extinct since 1800. Seven native species survive: all but two have been reduced in numbers or range, or both. The Grey Teal and the Shoveler continue to thrive. The two in greatest danger are the Brown Teal and the Blue Duck. Destruction of habitat is the most serious threat. Four species have been successfully established and four others have been stragglers from Australia in European times.

Yocom, Charles F. WATERFOWL WINTERING IN THE MARSHALL ISLANDS, SOUTHWEST PACIFIC OCEAN. Auk 81(3): 441-442. July 1964. WR 115: 53

[Humboldt State Coll., Arcata, Calif.] The presence of several species was noted as follows: gadwall (Anas strepera), mallard (Anas platyrhynchos), green-winged teal (Anas carolinensis), common teal (Anas crecca), pintail (Anas acuta), and shoveler (Spatula clypeata). These birds arrived in Sept. and remained until late Feb.

Young, Colin. EFFECTS OF RECENT HARD WINTERS ON THE SHELDUCKS OF THE YTHAN. 15th Ann. Rept. Wildfowl Trust 1962-63. p. 45. 1964. WR 115: 54
No winter mortality was noted on the Ythan estuary, Aberdeenshire, but early spring arrivals had inflamed swellings on the toes and webs of their feet, necrotic webs and missing webs. Spring arrivals averaged about 90 grams lighter in weight in 1963 than in 1962. Counts made during the breeding seasons indicated a decline of 20% in the 1963 as compared with the 1962 population.

Young, Colin. SHELDUCK TRAPPING METHODS. 15th Ann. Rept. Wildfowl Trust 1962-63. p. 95-96, 1 fig. 1964. WR 115: 54
The special features are: the extra wide outer funnel (shelducks abhor narrow funnels), the chain-link mesh on the inner chamber which prevents the shelducks from damaging their bills and also allows the smaller waders to escape, and most important of all, the "anti-drowning" modification in the roof. The last feature prevents the birds from flying out but does provide an emergency escape hatch in the event of very high tides. Barley is used as bait.

CRANES, RAILS, SHOREBIRDS

Boev, N., and M. Paspaleva-Antonova. [A CONTRIBUTION TO THE KNOWLEDGE OF THE BLACK STORK (CICONIA NIGRA L.) IN BULGARIA.] Bulgarska Akad. Nauk., Izvest. Zool. Inst. 16: 5-16, 2 figs. 1964. In Bulgarian with Russian and German summ. WR 115: 54

Errard, Christian. SUR LE COMPORTEMENT DE DIVERSION DU GRAVELOT A COLLIER INTERROMPU CHARADRIUS ALEXANDRINUS L. A L'ÉGARD DE L'HOMME. [ON DIVERSIONARY BEHAVIOR OF THE SNOWY PLOVER IN RELATIONSHIP TO MAN.] Alauda 31(4): 262-284. 1963. [From Bird-Banding 35(3), 1964. (In French).] WR 115: 54

Fogden, M. P. L. THE REPRODUCTIVE BEHAVIOUR AND TAXONOMY OF HEMPRICH'S GULL LARUS HEMPRICHI. Ibis 106(3): 299-320, 7 figs. July 1964. WR 115: 54
[Sarawak Museum, Kuching, Sarawak, Borneo.] Taxonomic implications are drawn from observations on behavior.

Holmes, Richard T., and Frank A. Pitelka. BREEDING BEHAVIOR AND TAXONOMIC RELATIONSHIPS OF THE CURLEW SANDPIPER. Auk 81(3): 362-379, 5 figs. July 1964. WR 115: 54
[Univ. Calif., Berkeley.] Studies of Calidris ferruginea conducted near Barrow, Alaska.

Lemmetyinen, Risto. LOKKIEN ESIINTYMISESTÄ JA RAVINNOSTA GULLKRONAN SELÄN KOILLISOSASSA. [OCCURENCE AND FEEDING HABITS OF GULLS IN THE NORTH-EASTERN PART OF THE AREA OF GULLKRONA.] Suomen Riista 16: 69-82, 7 figs. 1963. [In Finnish with English summ.] WR 115: 54
During the period 1948-1963, there was an increase in the populations of lesser black-backed gull (Larus fuscus) and common gull (L. canus). The chief food of L. fuscus was fish and Mytilus. For L. canus the chief food was oats and Mytilus. Of 34 food samples from great black-backed gulls (L. marinus), 19 contained remains of ducklings or other young birds.--From summ.

Lister, M. D. THE LAPWING HABITAT ENQUIRY, 1960-61. Bird Study 11(2): 128-147, 10 figs. June 1964. WR 115: 54
Results of questionnaire surveys indicated that no important difference was found in the size of the lapwing (Vanellus vanellus) populations of 1937 and 1960-1961.

Manning, T. H. GEOGRAPHICAL AND SEXUAL VARIATION IN THE LONG-TAILED JAEGER STERCORARIUS LONGICAUDUS VIEILLOT. Biol. Papers Univ. Alaska no. 7. iii + 16 p., 3 figs. Aug. 1964. Available from Frederick C. Dean, Univ. Alaska, College. Price 50¢. WR 115: 54

Perfiliev, V. J. [NEW DATA ON THE ECOLOGY OF THE WHITE CRANE.] Bull. Moscow Obshch. Ispit. Prirody (Biol.) 68: 25-28. 1963. [From Auk 81(3), 1964. In Russian.] WR 115: 55
Deals with Grus leucogeranus, endemic in the USSR. Contains the first description of complete clutches and downy young, data on density of the population, food habits, measurements of eggs, and nesting. Incubation is by the female. Based on field studies at Allaykhovrayon, Yakutia, in 1961.

Recher, Harry Frederick. SOME ASPECTS OF THE POPULATION BIOLOGY OF MIGRANT SHOREBIRDS. Ph.D. thesis, Stanford Univ. 137 p. 1964. [From Dissertation Abstr. 25(2), 1964.] WR 115: 55
A field study on inter- and intraspecies interactions.

Robertson, William B., Jr. THE TERNS OF THE DRY TORTUGAS. Bull. Fla. State Museum 8(1): 1-94, 12 figs. 1964. Available at $1.35 from Managing Editor, Bulletin, Fla. State Museum, Seagle Bldg., Gainesville. WR 115: 55
The sooty tern colony has fluctuated from a low of about 5,000 adults in 1903 to a reported peak of 190,000 in 1950; for the past four years it has remained steady at about 100,000. The brown noddy population, which reached a peak of 35,000 in 1919, was reduced by rats to about 400 adults in 1938; it is in the neighborhood of 2,000 today. A colony of 150 to 450 roseate terns has nested in most years from 1917 to the present. About 500 least terns nested regularly from 1916 to 1932, then unaccountably dwindled to a few pairs by 1937 and shortly afterward disappeared. Royal and sandwich terns nested abundantly in the mid-19th century, and a colony of royals may have existed as late as 1890. Both species are believed to have been extirpated from the Tortugas by egging. No verifiable evidence exists for the nesting of the common tern, which has been reported several times. The black noddy, first reported for the continental United States at Dry Tortugas in 1960, has been found there each summer since.--From synopsis.

Sauer, E. G. Franz. [ANIMAL NAVIGATION.] GOLDEN PLOVER MIGRATION, ITS EVOLUTION AND ORIENTATION. Proc. 16th Intern. Congr. Zool. 4: 380-381. [1964.] WR 115: 55
[Univ. Fla., Gainesville.]

Swinebroad, Jeff. NOCTURNAL ROOSTS OF MIGRATING SHOREBIRDS. Wilson Bull. 76(2): 155-159. June 1964. WR 115: 55
[Rutgers Univ., New Brunswick, N. J.] Summary: During the fall of 1952 through 1956 individuals of several species of migrating shorebirds were observed to occupy overnight mud flat roosts during stopover in the study area. The timing of evening flight to the roost seemed to be influenced by light intensity. The timing of the flight might be modified by behavior preceding migration. Deviations from the expected in the roosting flight may provide the observer with information about premigratory disposition of the flocks and alert him to a period for critical measurements.

Touleshkov, K. [ON MALLOPHAGA IN BIRDS OF THE CHARADRIIDAE FAMILY IN BULGARIA.] Bulgarska Akad. Nauk., Izvest. Zool. Inst. 15: 131-133. 1964. In Bulgarian with Russian and English summ. WR 115: 55
Reports of 27 spp. of Mallophaga from 10 spp. of Charadriidae.

HAWKS AND OWLS

Coetzee, C. G. THE PREY OF OWLS IN THE KRUGER NATIONAL PARK AS INDICATED BY OWL PELLETS COLLECTED DURING 1960-61. Koedoe 6: 115-125. 1963. WR 115: 55
[State Dept. Health, Johannesburg, Transvaal, Union South Africa.] The relative preponderance of prey species in different habitats is compared based on analyses of barn owl (Tyto alba affinis) pellets.

Enderson, James H. A STUDY OF THE PRAIRIE FALCON IN THE CENTRAL ROCKY MOUNTAIN REGION. Auk 81(3): 332-352, 5 figs. July 1964. WR 115: 56
[Colo. Coll., Colorado Springs.] Contains information on habitat, food, nesting success, movement, molt, body weight and mortality of Falco mexicanus.

Fawks, Elton. FEBRUARY 15 OR 16, 1964, BALD EAGLE COUNT. Iowa Bird Life 34(2): 51. June 1964. WR 115: 56
[R.R. 1, Box 112, East Moline, Ill.] A total of 485 eagles was counted along the portion of the Mississippi River bordering Ill. and interior Ill. Of the 485 birds, 80% were adults and 20% immatures.

Fowler, James M., and James B. Cope. NOTES ON THE HARPY EAGLE IN BRITISH GUIANA. Auk 81(3): 257-273, 3 figs. July 1964. WR 115: 56
[Route 3, Box 534, Albany, Ga.] With descriptions of the nest sites, behavior of free and captive ♂♂ and ♀♀, feeding habits, and plumages of Harpia harpyja.

Hancock, David. BALD EAGLES WINTERING IN THE SOUTHERN GULF ISLANDS, BRITISH COLUMBIA. Wilson Bull. 76(2): 111-120, 2 figs. June 1964. WR 115: 56
[Univ. British Columbia, Vancouver, Canada.] Twice-monthly aerial surveys were made between 26 Sept. 1962 and 18 Apr. 1963. Bald eagles first appeared about the third week in Oct., and the population increased until about mid-Jan., with the sharpest increase in early Jan. Until the last of Dec., the new arrivals were chiefly adults, but the large Jan. contingent was made up equally of adults and immatures. Adults declined after mid-Jan., but immatures continued to increase until mid-Feb. The most prominent food item of the wintering eagles was dead sheep.

Hensel, Richard J., and Willard A. Troyer. NESTING STUDIES OF THE BALD EAGLE IN ALASKA. Condor 66(4): 282-286, 1 fig. July 1964. WR 115: 56
[Kodiak Natl. Wildl. Refuge, Kodiak, Alaska.] Summary: A nesting study of the bald eagle was conducted in the Kodiak National Wildlife Refuge of Alaska in 1959, 1961, and 1962. Territories were established from mid-Mar. through Apr. and were maintained through Aug. Territorial size varied from 28 to 112 acres. Nests per territory varied from one to three with one nest being the most common. All nests were in live cottonwood trees and averaged 53 feet in height above the ground. Nests averaged 63 inches in width and 38 inches in depth. Egg laying began in late Apr. and reached a peak the second week in May. The mean clutch size was 1.7 eggs; incubation lasted about 34 days. Nesting success, based on number of young leaving nests in relation to number of eggs laid, varied from 33 to 77 per cent in the three seasons. A cause of nesting failure was abandonment. Data suggest that there has been no alarming decline in nesting numbers or productivity in the last decade.

Hill, David O. LIGHT SENSITIVITY AND THE FUNCTION OF THE NICTITATING MEMBRANE IN A NOCTURNAL OWL. Condor 66(4): 305-306. July 1964. WR 115: 56
[Harvard Univ., Cambridge, Mass.] The barn owl's nictitating membrane apparently is not used to shield the eyes from light, but it may be used to lubricate and cleanse the cornea and to protect the eyes from contact with foreign objects.

Honer, M. R. OBSERVATIONS ON THE BARN OWL (TYTO ALBA GUTTATA) IN THE NETHERLANDS IN RELATION TO ITS ECOLOGY AND POPULATION FLUCTUATIONS. Ardea 51 (2/4): 158-195, 11 figs. 1963. WR 115: 56
[State Agr. Univ., Wageningen, Netherlands.] The barn owl shows a preference for habitats with buildings offering easy access and with alternations of vegetational types and land elevation. Barn owls store only limited fat reserves, and their ability to survive without food is of short duration. Heavy owl mortality and much dispersal occurs about every three years, presumably associated with fluctuations in the small rodent population. Population fluctuations are not caused by disease or parasites, although birds debilitated by food shortage are targets for disease and parasites. There are approximately 3000 pairs of barn owls in the Netherlands, and, despite local declines, there is no reason to fear the total disappearance of the species.

Johnson, Roger D. RED-TAILED HAWK PREYS ON BLACK-TAILED RATTLESNAKE. Auk 81(3): 435. July 1964. WR 115: 57

[U. S. Fish & Wildl. Serv., Roswell, N. Mex.] The black-tailed rattlesnake (Crotalus molossus) was approximately 3 feet long.

Mitchell, B. L. OWL PREY. Puku 2: 129. 1964. WR 115: 57

Spotted eagle owls (Bubo africanus), frequently killed on roads at night in northern Rhodesia and Nyasaland, appear to feed largely on insects and small mammals. A barn owl was observed catching swallows (presumably Hirundo abyssinica) roosting in an old house.

Perry, Alfred E., and George Rogers. PREDATION BY GREAT HORNED OWL (BUBO VIRGINIANUS) ON YOUNG MEXICAN FREETAILED BATS (TADARIDA BRASILIENSIS MEXICANA) IN MAJOR COUNTY, OKLAHOMA. Southwestern Nat. 9(3): 205. 20 Aug. 1964. WR 115: 57

[Okla. State Univ., Stillwater.] Twenty-one bands which had been placed on neonatal bats were found within about two months near the banding site in pellets of great horned owls.

Potapow, R. L. [NIDIFICATION OF THE KESTREL, FALCO T. TINNUNCULUS L., IN THE PAMIRS.] Zool. Zhur. 41: 1265-1266. 1962. [From Auk 81(3), 1964. In Russian with English summ.] WR 115: 57

Southern, William E. ADDITIONAL OBSERVATIONS ON WINTER BALD EAGLE POPULATIONS: INCLUDING REMARKS ON BIOTELEMETRY TECHNIQUES AND IMMATURE PLUMAGES. Wilson Bull. 76(2): 121-137, 3 figs. June 1964. WR 115: 57

[Northern Ill. Univ., Dekalb.] Immature eagles arrived near Savanna, Ill., before adults and were more abundant than adults until after mid-Dec. The adult population increased to 225 by early Feb. All eagles disappeared before 6 Apr. Gizzard shad was the chief item of food. Eagles roosted both singly and in small groups. Movements of birds were followed through the use of color and back-tag markers and radio transmitters. The radio transmitters weighed about 80 grams and had a life of about 3 months. One eagle was tracked periodically for about 5 weeks. Plumage patterns were arranged in 6 age groups.

Swisher, John P., Jr. A ROOSTING AREA OF THE BALD EAGLE IN NORTHERN UTAH. Wilson Bull. 76(2): 186-187. June 1964. WR 115: 57

[117 North 10 East, Brigham City, Utah.] The night roost was about 18 miles from the feeding place.

BLACKBIRDS, STARLINGS, CROWS

De Grazio, John W. METHODS OF CONTROLLING BLACKBIRD DAMAGE TO FIELD CORN IN SOUTH DAKOTA. Second Vertebrate Pest Control Conf., March 4 and 5, 1964, Anaheim, Calif. p. 43-49. 1964. WR 115: 57

[Bur. Sport Fisheries & Wildl., Denver, Colo.] Frightening devices, primarily carbide exploders, are widely used in the Sand Lake area and have greatly helped local farmers in protecting their fields. Tests with the various amplified distress calls and equipment show promise in protecting crops but will require improvement in calls, equipment, and techniques. Spray applications with DRC-632 as a contact toxicant on roosting vegetation and as a direct contact toxicant on roosting birds show that ground sprays have limited utility and that aerial sprays are not feasible under Sand Lake conditions. Baiting studies show that bait placement and timing are two important factors to consider in attempting to poison birds. A fright-producing chemical, DRC-1327, proved its utility in alleviating damage to ripening corn.--From summ.

Elliott, H. Nelson. STARLINGS IN THE PACIFIC NORTHWEST. Second Vertebrate Pest Control Conf., March 4 and 5, 1964, Anaheim, Calif. p. 29-39. 1964. WR 115: 58
[Bur. Sport Fisheries & Wildl., Portland, Oreg.] The use of traps, 6 x 8 x 6 feet, appears to offer the greatest promise for controlling starlings in Wash. fruit-producing areas. Use of approximately 100 traps almost eliminated starling damage to cherries in the Yakima Valley in 1963.

Madge, S. G. CARRION CROW 'BATHING' ON LAWN. British Birds 57(8): 328. Aug. 1964. WR 115: 58
Describes movements of a carrion crow (Corvus corone) "bathing" in rain and wet grass.

Siebe, Charles C. STARLINGS IN CALIFORNIA. Second Vertebrate Pest Control Conf., March 4 and 5, 1964, Anaheim, Calif. p. 40-42. 1964. WR 115: 58
[Calif. Dept. Agr., Sacramento.] Baits treated with tetraethyl pyrophosphate were placed in cattle feed lots to control starlings, and results suggest method holds promise. As of 1 Jan. 1964, a total of 27,103 starlings has been banded in Calif.

Willson, Mary Frances. BREEDING ECOLOGY OF THE YELLOW-HEADED BLACKBIRD. Ph.D. thesis, Univ. Wash. 132 p. 1964. [From Dissertation Abstr. 25(2), 1964.] WR 115: 58

Willson, Mary F., and Gordon H. Orians. [THE REGULATION OF NUMBERS IN NATURAL POPULATIONS.] COMPARATIVE ECOLOGY OF RED-WINGED AND YELLOW-HEADED BLACKBIRDS DURING THE BREEDING SEASON. Proc. 16th Intern. Congr. Zool. 3: 342-346. [1964.] WR 115: 58
[Univ. Wash., Seattle.]

OTHER BIRDS

Beltz, Joan Dunkel. AN ANALYSIS OF VOCALIZATIONS OF THE RUFOUS-SIDED TOWHEE, PIPILO ERYTHROPHTHALMUS ORBGONUS (BELL). Ph.D. thesis, Oreg. State Univ. 87 p. 1964. [From abstr. in Dissertation Abstr. 25(1), 1964.] WR 115: 58
Lists 11 calls with behavioral correlates.

Broekhuysen, G. J. THE BREEDING BIOLOGY OF THE ORANGE-BREASTED SUNBIRD ANTHOBAPHES VIOLACEA (LINNAEUS). Ostrich 34(4): 187-234. 1963. [From Bird-Banding 35(3), 1964.] WR 115: 58

Bunch, Mrs. Carl H. NESTING OF THE WESTERN PURPLE MARTIN. Murrelet 45(1): 10-11. Jan.-Apr. 1964. WR 115: 58
[Montesano, Wash.] Purple martins in western U. S. do not normally utilize man-placed nesting boxes, but several cases of such use are reported in this note. The birds nested as isolated pairs rather than colonies, however.

Carrick, Robert. [THE REGULATION OF NUMBERS IN NATURAL POPULATIONS.] SOCIAL AND ECOLOGICAL FACTORS IN POPULATION REGULATION OF THE AUSTRALIAN MAGPIE, GYMNORHINA TIBICEN. Proc. 16th Intern. Congr. Zool. 3: 339-341. [1964.] WR 115: 58
[Div. Wildl. Res., CSIRO, Canberra, Australia.]

Dunham, David W. REPRODUCTIVE DISPLAYS OF THE WARBLING VIREO. Wilson Bull. 76(2): 170-173, 1 fig. June 1964. WR 115: 58
[Cornell Univ., Ithaca, N. Y.]

Evans, Francis C. THE FOOD OF VESPER, FIELD AND CHIPPING SPARROWS NESTING IN AN ABANDONED FIELD IN SOUTHEASTERN MICHIGAN. Am. Midland Nat. 72(1): 57-75. July 1964. WR 115: 58
[Univ. Mich., Ann Arbor.]

Ficken, Millicent S. NEST-SITE SELECTION IN THE AMERICAN REDSTART. Wilson Bull. 76(2): 189-190. June 1964. WR 115: 59
[Univ. Md., College Park.]

Gaunt, Abbot Stott. FOSSORIAL ADAPTATIONS IN THE BANK SWALLOW, RIPARIA RIPARIA (LINNAEUS). Ph.D. thesis, Univ. Kans. 96 p. 1963. [From abstr. in Dissertation Abstr. 24(12, pt. 1), 1964.] WR 115: 59

Joslin, D. MALE PIED WAGTAIL KILLING ANOTHER AND PERSISTENTLY ATTACKING THE CORPSE. British Birds 57(8): 329-330. Aug. 1964. WR 115: 59
A pied wagtail (Motacilla alba) in a greenhouse attacked, killed, and ate the brain of another ♂ of the same species.

Lancaster, D. A. LIFE HISTORY OF THE BOUCARD TINAMOU IN BRITISH HONDURAS. PART I: DISTRIBUTION AND GENERAL BEHAVIOR. Condor 66(3): 165-181, 10 figs. May-June 1964. WR 115: 59
[Cornell Univ., Ithaca, N. Y.]

Lancaster, D. A. LIFE HISTORY OF THE BOUCARD TINAMOU IN BRITISH HOMDURAS. PART II: BREEDING BIOLOGY. Condor 66(4): 253-276, 13 figs. July-Aug. 1964. WR 115: 59
[Cornell Univ., Ithaca, N. Y.]

Maher, William J. GROWTH RATE AND DEVELOPMENT OF ENDOTHERMY IN THE SNOW BUNTING (PLECTROPHENAX NIVALIS) AND LAPLAND LONGSPUR (CALCARIUS LAPPONICUS) AT BARROW, ALASKA. Ecology 45(3): 520-528, 4 figs. Summer 1964. WR 115: 59
[Univ. Saskatchewan, Saskatoon, Canada.] Both species are ectothermic at hatching and essentially endothermic by their seventh day of life. Young Lapland longspurs remain in the nest an average of 7.4 days and snow buntings 13.1 days. Despite the differences in nest-dependence, weight curves and plumage development of the two species are closely similar.

Mewaldt, L. Richard. EFFECTS OF BIRD REMOVAL ON A WINTER POPULATION OF SPARROWS. Bird-Banding 35(3): 184-195, 4 figs. July 1964. WR 115: 59
[San Jose State Coll., San Jose, Calif.] Repopulation by the same species quickly followed removal of white-crowned sparrows, golden-crowned sparrows, Oregon juncos and house sparrows from a suburban lot in Calif.

Miller, Alden H. PHOTOREGULATIVE AND INNATE FACTORS IN THE REPRODUCTIVE CYCLES OF AN EQUATORIAL SPARROW. Proc. 16th Intern. Congr. Zool. 1: 166. [1964.] WR 115: 59
[Univ. Calif., Berkeley.] Equatorial populations of the Andean sparrow (Zonotrichia capensis) show innate cycles in the ♂♂, recrudescence and regression of the testes each occurring twice annually under the constant day lengths of the equatorial region. When birds are subjected to the photoperiodism of latitude 38°N, these cycles continue with little evidence of photoregulation.

Mueller, Helmut C., and Daniel D. Berger. A WESTWARD AUTUMNAL MOVEMENT OF A BROWN CREEPER. Bird-Banding 35(3): 203-204. July 1964. WR 115: 59
[Univ. Wis., Madison.] A banded immature brown creeper traveled 275 miles westward between 4 Oct. and 14 Oct. 1962.

Mulligan, James Anthony. PHYSICAL ANALYSIS OF VARIATION AND DEVELOPMENT IN THE SONG OF MELOSPIZA MELODIA. Ph.D. thesis, Univ. Calif. 182 p. 1963. [From abstr. in Dissertation Abstr. 24(12, pt. 1), 1964.] WR 115: 59

Mulligan, James. AN EXPERIMENTAL STUDY OF THE DEVELOPMENT OF SONG IN THE SONG SPARROW. Proc. 16th Intern. Congr. Zool. 2: 22. [1964.] WR 115: 59
[Univ. Calif., Berkeley.] It is concluded that normal song development is partially dependent on experience of adult song, that there is a sensitive period of learning during the first few months of life, and that auditory feedback in the developmental process is essential.--From abstr.

Overmire, Thomas Gordon. THE EFFECTS OF GRAZING UPON HABITAT UTILIZATION OF THE DICKCISSEL (SPIZA AMERICANA) AND BELL'S VIREO (VIREO BELLII) IN NORTH CENTRAL OKLAHOMA. Ph.D. thesis, Okla. State Univ. 65 p. 1963. [From Dissertation Abstr. 25(2), 1964.] WR 115: 60

Because of associated reduction of nesting sites, populations of dickcissels and Bell's vireos were each 50% less on grazed than ungrazed land. Dickcissel nests built early in the season were on or near the ground; later-built nests were in shrubs or low tree branches. Of the 75 dickcissel nests, 29% were successful; of the 79 Bell's vireo nests, 30% were successful. Grazing and the degree of nest concealment did not affect nesting success of either species. Eleven per cent of the ♂ dickcissels were polygamous.

Root, Richard B. ECOLOGICAL INTERACTIONS OF THE CHESTNUT-BACKED CHICKADEE FOLLOWING A RANGE EXTENSION. Condor 66(3): 229-238, 1 fig. May 1964. WR 115: 60

[Museum Vertebrate Zool., Berkeley, Calif.] The chestnut-backed chickadee (Parus rufescens) has recently extended its range into new areas already occupied by the plain titmouse (Parus inornatus). These species exploit the same situations and do not maintain exclusive territories, and individuals of both species seem mutually tolerant. Niche separation is maintained by differences in the efficiency with which portions of a common range of situations can be exploited.--From summ.

Shaub, B. M. NOTES ON THE DESTRUCTION OF BANDED EVENING GROSBEAKS IN QUEBEC IN 1960. Wilson Bull. 76(2): 179-185, 4 figs. June 1964. WR 115: 60

[Shaub Ornithol. Res. Sta., Northampton, Mass.] Relates banding localities and times to recovery place and time of 104 evening grosbeaks (Hesperiphona vespertina) recovered in 1960 at or near one site in Quebec.

Shaub, Benjamin M. JOHN JAMES AUDUBON AND JUVENILE EVENING GROSBEAKS. Wilson Bull. 76(2): 174-178, 3 figs. June 1964. WR 115: 60

[Shaub Ornithol. Res. Sta., Northampton, Mass.] Contrary to illustrations by J. J. Audubon, sexes of juvenile evening grosbeaks (Hesperiphona vespertina) can be distinguished. The first winter plumage of both sexes is like adults and is acquired after mid-Sept.

Skutch, Alexander F. LIFE HISTORY OF THE SCALY-BREASTED HUMMINGBIRD. Condor 66(3): 186-198. May 1964. WR 115: 60

[El Quizarrá, San Isidro del General, Costa Rica.] Voice, courtship, nest, eggs, incubation, nestlings, departure of nestlings, attainment of independence and the sequence of broods in Phaeochroa cuvierii.

Skutch, Alexander F. LIFE HISTORY OF THE BLUE-DIADEMED MOTMOT MOMOTUS MOMOTA. Ibis 106(3): 321-332. July 1964. WR 115: 60

[El Quizarrá, San Isidro del General, Costa Rica.]

Sturdevant, Carleton A. ARTIFICIAL NESTS FOR CLIFF SWALLOWS. Kingbird 14 (3): 141-143, illus. July 1964. WR 115: 60

[R.D. 1, Prattsburg, N. Y.] Nests were constructed of sponge rubber with an outside covering of wood fiber plaster. All of the 36 artificial nests were used by the birds. No natural nests were constructed as long as artificial nests were available.

Swinebroad, Jeff. NET-SHYNESS AND WOOD THRUSH POPULATIONS. Bird-Banding 35 (3): 196-202, 2 figs. July 1964. WR 115: 60

[Douglass Coll., New Brunswick, N. J.] Recapture data indicated that wood thrushes were not net- or area-shy.

Thapliyal, J. P., and R. N. Saxena. ABSENCE OF A REFRACTORY PERIOD IN THE COMMON WEAVER BIRD. Condor 66(3): 199-208, 2 figs. May 1964. WR 115: 61
[Banaras Hindu Univ., Varanasi, India.] The common weaver bird (Ploceus philippinus) does not experience any refractory period and can be maintained in a peak breeding condition continuously. It responds to long days (15 hours) during all phases of its breeding cycle. The cycle in nature probably ends not because the hypothalamus or hypophysis or gonad has become refractory but because the day length has fallen below the minimum required to maintain an active hypophysial-gonadal axis.--From summ.

Waters, Estlin. ARRIVAL TIMES AND MEASUREMENTS OF SMALL PETRELS ON ST. KILDA. British Birds 57(8): 309-315, 2 figs. Aug. 1964. WR 115: 61
Seasonal and daily arrival and departure times are given for Leach's petrels (Oceanodroma leucorrhoa) and storm petrels (Hydrobates pelagicus). Some data on weights and measurements are also given.

Wiley, Haven, and Joseph Croft. ECOLOGICAL NOTES ON HENSLOW'S SPARROWS NEAR LOUISVILLE, Ky. Warbler 40(3): 39-41. Aug. 1964. WR 115: 61
[210 Pleasant Ave., Louisville, Ky.] Habitat requirements of Henslow's sparrows are dense ground cover and plant stems extending 2-3 feet above the ground cover. Orchard grass meets these requirements. Habitat requirements of the grasshopper sparrow differed from those of the Henslow's in that the grasshopper sparrow did not require tall plant stems. Nesting Henslow's sparrows were 200-300 feet apart in a field; whereas grasshopper sparrows were 300-400 feet apart. Grasshopper sparrows, dickcissels and short-billed marsh wrens were usual habitat associates.

REPTILES AND AMPHIBIANS

Asplund, Kenneth K. SEASONAL VARIATION IN THE DIET OF UROSAURUS ORNATUS IN A RIPARIAN COMMUNITY. Herpetologica 20(2): 91-94. 29 June 1964. WR 115: 61
[Univ. Calif., Los Angeles.] The diet of Urosaurus ornatus suggests that this lizard is terrestrial during the winter, early spring and late autumn and arboreal during the hotter months.

Asplund, Kenneth K., and Charles H. Lowe. REPRODUCTIVE CYCLES OF THE IGUANID LIZARDS UROSAURUS ORNATUS AND UTA STANSBURIANA IN SOUTHEASTERN ARIZONA. J. Morphology 115(1): 27-33, 4 figs. July 1964. WR 115: 61
[Univ. Calif., Los Angeles.]

Ayotte, A. E. LAST STAND OF THE ALLIGATORS? Audubon Magazine 66(4): 237-241, illus. July-Aug. 1964. WR 115: 61
Poachers annually take 50,000 alligators in Fla. alone. With the market price for alligator skins being $5.00 or more per linear foot, alligator populations are rapidly disappearing. Some poachers' tricks for evading the law are described.

Belkin, Daniel A. VARIATIONS IN HEART RATE DURING VOLUNTARY DIVING IN THE TURTLE PSEUDEMYS CONCINNA. Copeia 1964(2): 321-330, 4 figs. June 1964. WR 115: 61
[Univ. Fla., Gainesville.] Minimum heart rate was 2.3 beats per minute, and the rate fell to near minimum within 1-2 beats after submergence. Mean rate during diving was 41% of the mean emergent rate. Oxygen stores are sufficient to enable Pseudemys concinna to remain submerged 2-3 hours without any physiological compensation. Contains more than 30 references.

Berry, P. S. M. THE GABOON VIPER OF THE PLATEAU FORESTS OF NORTHERN RHODESIA. Puku 1: 71-74, [1 fig.]. 1963. WR 115: 61
Observations on temperament, behavior, food, breeding, and skin sloughing of the Gaboon viper (Bitis gabonica).

Berry, P. Y. THE BREEDING PATTERNS OF SEVEN SPECIES OF SINGAPORE ANURA. J. Animal Ecol. 33(2): 227-243, 5 figs. June 1964. WR 115: 62
[Univ. Malaya, Kuala Lumpur, Malaysia.] In Singapore, an area with a relatively uniform climate at all seasons, anura breed throughout the year. It was suggested that control of reproduction by environment may be more common than inherent breeding rhythms.--From summ.

Blair, W. Frank. [EVOLUTION AT THE POPULATION AND INTERPOPULATION LEVELS.] ISOLATING MECHANISMS AND INTERSPECIES INTERACTION IN ANURANS. Proc. 16th Intern. Congr. Zool. 3: 315-319. [1964.] WR 115: 62
[Univ. Texas, Austin.]

Burghardt, Gordon. EFFECTS OF PREY SIZE AND MOVEMENT ON THE FEEDING BEHAVIOR OF THE LIZARDS ANOLIS CAROLINENSIS AND EUMECES FASCIATUS. Copeia 1964(3): 576-578. 10 Sept. 1964. WR 115: 62
[Univ. Chicago, Chicago, Ill.] In tests with captive lizards, moving worms were chosen over non-moving and large over small.

Burrage, Bryan R. THE EGGS AND YOUNG OF GERRHONOTUS MULTICARINATUS NANUS FITCH. Herpetologica 20(2): 133. 29 June 1964. WR 115: 62
[San Diego State Coll., San Diego, Calif.] Information on clutch size and incubation period of the alligator lizard.

Burrage, Bryan R. TWO LONGEVITY RECORDS FOR ANOLIS CAROLINENSIS CAROLINENSIS VOIGT. Herpetologica 20(2): 140. 29 June 1964. WR 115: 62
[San Diego State Coll., San Diego, Calif.] A male lived in captivity 5 years, 4 months, 21 days; a female lived 5 years, 2 months, 20 days.

Duellman, William E. [NEW TECHNIQUES FOR SYSTEMATICS.] IMPORTANCE OF BREEDING CALL IN AMPHIBIAN SYSTEMATICS. Proc. 16th Intern. Congr. Zool. 4: 106-110. [1964.] WR 115: 62
[Univ. Kans., Lawrence.]

Duellman, William E., and Linda Trueb Klaas. THE BIOLOGY OF THE HYLID FROG TRIPRION PETASATUS. Copeia 1964 (2): 308-321, 10 figs. June 1964. WR 115: 62
[Univ. Kans., Lawrence.]

Fitzsimons, V., and C. K. Brain. A SHORT ACCOUNT OF THE REPTILES OF THE KALAHARI GEMSBOK NATIONAL PARK. Koedoe 1: 99-104, 1 fig. 1958. WR 115: 62
Twenty lizards and 17 snakes are listed with annotations covering their known occurrences in or near the Park.

Funk, Richard S. ON THE FOOD OF CROTALUS M. MOLOSSUS. Herpetologica 20(2): 134. 29 June 1964. WR 115: 62
[3025 Del Mar Ave., Yuma, Ariz.] A lizard (Heloderma suspectum) was found in the digestive tract of a rattlesnake. [Previously Crotalus m. molossus has been reported as preying only on mammals.]

Gates, Gerald Otis. ECOLOGY OF THE IGUANID LIZARD UROSAURUS GRACIOSUS IN ARIZONA. Ph.D. thesis, Univ. Ariz. 270 p. 1963. [From abstr. in Dissertation Abstr. 25(1), 1964.] WR 115: 62

Greding, Edward J., Jr. FOOD OF NATRIX IN HUNT COUNTY, TEXAS. Southwestern Nat. 9(3): 206. 20 Aug. 1964. WR 115: 62
[Tarleton State Coll., Stephenville, Texas.] Of 14 stomachs of Natrix erythrogaster flavigaster examined, 10 were empty and 4 contained fish remains; of 20 stomachs of N. rhombifera rhombifera examined, 14 were empty, 5 contained fish remains, and 1 contained remains of an unidentified salamander.

Groves, Frank. SWALLOWING OF SHED SKIN BY THE SNAKE LAMPROPELTIS GETULUS GETULUS LINNAEUS. Herpetologica 20(2): 128. 29 June 1964. WR 115: 62
[Baltimore Zoo, Baltimore, Md.] A caged young eastern king snake ate its entire skin which it had cast a day earlier.

Hanlon, Robert W. REPRODUCTIVE ACTIVITY OF THE BAHAMAN BOA (EPICRATES STRIATUS). Herpetologica 20(2): 143-144. 29 June 1964. WR 115: 63
[St. Augustine's Coll., Nassau, Bahama Islands.] Copulation, gestation period and litter size of Bahaman boa.

Hirth, Harold F. OBSERVATIONS ON THE FER-DE-LANCE, BOTHROPS ATROX, IN COASTAL COSTA RICA. Copeia 1964(2): 453-454. June 1964. WR 115: 63
[Univ. Utah, Salt Lake City.] With notes on habitat, number and size of young at birth, and length of fangs.

Hutt, Art. THE ALLIGATOR. Fla. Wildl. 18(3): 12-17, 34, illus. Aug. 1964. WR 115: 63
[Fla. Game & Fresh Water Fish Comm., Tallahassee.] A good popular article on the behavior, population decline, and need for preservation of the American alligator (Alligator mississippiensis).

Hutton, Kenneth E. EFFECTS OF HYPOTHERMIA ON TURTLE BLOOD GLUCOSE. Herpetologica 20(2): 129-131. 29 June 1964. WR 115: 63
[San Jose State Coll., San Jose, Calif.] There was a sharp increase in blood glucose when Pseudemys scripta and Terrapene carolina were abruptly moved from an environment at 26-28 C to one at 4-6 C, but there was no change in glucose when the temperature change was slowly made.

Kapus, Edward J. ANATOMICAL EVIDENCE FOR HETERODON BEING POISONOUS. Herpetologica 20(2): 137-138. 29 June 1964. WR 115: 63
[Chicago Acad. Sci., Chicago, Ill.] The bite of the hog-nosed snake (Heterodon) may be slightly poisonous.

LaPointe, Joe. INDUCTION OF OVIPOSITION IN LIZARDS WITH THE HORMONE OXYTOCIN. Copeia 1964(2): 451-452. June 1964. WR 115: 63
[Univ. Calif., Berkeley.] Use of two USP units of oxytocin in intraperitoneal injections induced lizards (Sceloporus occidentalis) to start egg laying within one hour after injection.

Long, Charles A. THE BADGER AS A NATURAL ENEMY OF AMBYSTOMA TIGRINUM AND BUFO BORBAS. Herpetologica 20(2): 144. 29 June 1964. WR 115: 63
[Univ. Ill., Urbana.] A badger's stomach contained 1 Ambystoma, 5 Bufo and 5 Microtus.

Mayhew, Wilbur W. PHOTOPERIODIC RESPONSES IN THREE SPECIES OF THE LIZARD GENUS UMA. Herpetologica 20(2): 95-113, 4 figs. 29 June 1964. WR 115: 63
[Univ. Calif., Riverside.] Infrared heat lamps were found to be less stimulating than incandescent bulbs, but lizards showed sexual responses to infrared light exposure. Light appeared to be more important than heat in stimulating reproductive activity. In natural conditions, the effective photoperiod is controlled by behavior rather than by sunrise and sunset.

Mertens, Robert. A LONGEVITY RECORD FOR A HYBRID WATERSNAKE. Herpetologica 20(2): 134. 29 June 1964. WR 115: 63
[Natur-Museum & Forschungs-Inst. Senckenberg, Frankfort (Main), Germany.] A male Natrix lived in captivity for slightly more than 15 years.

Norris, Kenneth S., and Charles H. Lowe. AN ANALYSIS OF BACKGROUND COLOR-MATCHING IN AMPHIBIANS AND REPTILES. Ecology 45(3): 565-580, 15 figs. Summer 1964. WR 115: 63
[Univ. Calif., Los Angeles.] It is concluded that the degree of background color-matching is related to: the size range of the color-matched species, the ecological restriction of the species, the qualities of the visual apparatus of predators upon the species, and the adaptive compromise struck by the species. --From abstr.

Pienaar, U. de V. THE ZOOGEOGRAPHY AND SYSTEMATIC LIST OF AMPHIBIA IN THE KRUGER NATIONAL PARK. Koedoe 6: 76-82 + 34 figs. on 18 pls. 1963. WR 115: 64
[Kruger Natl. Park, Skukuza, Republic South Africa.] A briefly annotated list and series of distribution maps of the 31 spp. of amphibians of Kruger National Park.

Richmond, Neil D. THE GREEN FROG (RANA CLAMITANS MELANOTA) DEVELOPING IN ONE SEASON. Herpetologica 20(2): 132. 29 June 1964. WR 115: 64
[Carnegie Museum, Pittsburgh, Pa.]

Salthe, Stanley N., and Barbara M. Salthe. INDUCED COURTSHIP IN THE SALAMANDER PSEUDOEURYCEA BELLI. Copeia 1964(3): 574-576. 10 Sept. 1964. WR 115: 64
[Brandeis Univ., Waltham, Mass.] A ♂ was given intraperitoneal injections of ground Rana pipiens pituitary glands and pregnant mare serum, and a ♀ was given injections of Rana pipiens pituitary glands. The observations of the courtship behavior which followed are reported in detail in this note.

Savage, J. M. [THE FAUNA OF NORTH AMERICA, ITS ORIGIN AND UNIQUE COMPOSITION.] DEVELOPMENT OF THE HERPETOFAUNA. Proc. 16th Intern. Congr. Zool. 4: 12-14. [1964.] WR 115: 64
[Univ. Southern Calif., Los Angeles.]

Schmid, William D., and James C. Underhill. SOME ASPECTS OF THE WATER ECONOMIES OF NINE SPECIES OF AMPHIBIANS. Proc. 16th Intern. Congr. Zool. 1: 248. [1964.] WR 115: 64
[Univ. N. Dak., Grand Forks.] Species from more aquatic habitats exhibited a lower tolerance to desiccation stress than species from terrestrial habitats, but the aquatic species were more tolerant to hydration stress. Blood of aquatic species was of lower effective osmolarity and the skin less permeable to water.

Spalatin, J., R. Connell, A. N. Burton, and B. J. Gollop. WESTERN EQUINE ENCEPHALITIS IN SASKATCHEWAN REPTILES AND AMPHIBIANS, 1961-1963. Canadian J. Comp. Med. 28(6): 131-142, 1 fig. June 1964. WR 115: 64

Stebbins, Robert C. BODY TEMPERATURE STUDIES IN SOUTH AFRICAN LIZARDS. Koedoe 4: 54-67, 3 figs. 1961. WR 115: 64
[Univ. Calif., Berkeley.]

Tester, John R., and Walter J. Breckenridge. POPULATION DYNAMICS OF THE MANITOBA TOAD, BUFO HEMIOPHRYS, IN NORTHWESTERN MINNESOTA. Ecology 45(3): 592-601, 5 figs. Summer 1964. WR 115: 64
[Univ. Minn., Minneapolis.] Heavier mortality of immature than adult toads may result from shallower hibernacula of immatures and deeper frost penetration in some years. In the spring population, ♂♂ and ♀♀ occurred in approximately equal numbers. Spring emergence appeared to be related to rising temperature and precipitation, but the peaks of emergence occurred at about the same date in each of the three years of the study. Adults emerged earlier than immatures; adults of both sexes emerged at the same time. Manitoba toads winter in a special type of mound which occurs on the prairie at a density of about two per acre.--From abstr.

Valentine, Barry D. A PRELIMINARY KEY TO THE FAMILIES OF SALAMANDERS AND SIRENIDS WITH GILLS OR GILL SLITS. Copeia 1964(3): 582-583. 10 Sept. 1964. WR 115: 64
[Ohio State Univ., Columbus.]

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